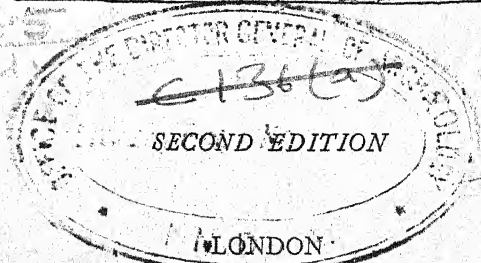
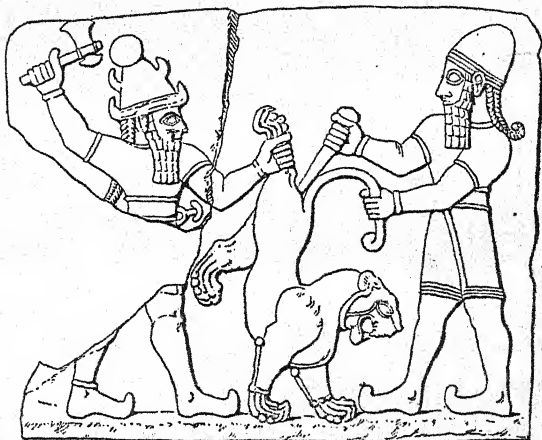


HOW TO OBSERVE IN ARCHAEOLOGY

SUGGESTIONS FOR TRAVELLERS
IN THE NEAR AND MIDDLE EAST

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PREFACE TO THE SECOND EDITION

THE first edition of this handbook being exhausted, the opportunity has been taken to submit it to a thorough revision in the light of recent experience and the results of the latest excavations. For this we are especially indebted to Mr. C. L. Woolley, who has made large additions to the chapter on 'Method', to Messrs. R. A. Smith, E. J. Forsdyke, G. M. Fitzgerald, who have revised or rewritten the sections dealing with the Stone Age, Greece, and Palestine respectively, and to Mr. O. Davies, for his note on Mines and Quarries. The chapter dealing with Laws of Antiquities has been brought up to date so far as possible; but it should be emphasized that the existing laws almost everywhere leave much to administrative discretion, and that travellers and excavators will be well advised to treat the official authorities with the fullest frankness, to ascertain their views and conform to their wishes.

F. G. KENYON.

January, 1929.

PREFACE TO THE FIRST EDITION

THIS Handbook is intended primarily for the use of travellers in the Near and Middle East who are interested in antiquities without being already trained archaeologists. It is the outcome of a recommendation made by the Archaeological Joint Committee, a body recently established, on the initiative of the British Academy and at the request of the Foreign Office, to focus the knowledge and experience of British scholars and archaeologists and to place it at the disposal of the Government when advice or information is needed upon matters connected with archaeological science. The Committee is composed of representatives of the principal English societies connected with Archaeology, and it is hoped that it may be recognized as the natural body of reference, both for Government Departments and for the public, on matters connected with archaeological research in foreign lands. It represents no one institution and no one interest. Its purpose is to protect the interests of archaeological science, to secure a sane and enlightened administration of antiquities in the lands which are now being more fully opened to research, and to promote the advance of knowledge in the spheres to which its competence extends.

One means of serving this cause is to provide information for the guidance of travellers in the lands of antiquity. Much knowledge is lost because it comes in the way of those who do not know how to profit by it or to record it. Accordingly, just as the Natural History Museum has issued a series of pamphlets of advice to the collectors of natural history specimens, so it has been thought that a handbook of elementary information and advice may be found of service by travellers with archaeological tastes; and the Trustees of the British Museum have undertaken the publication of it. The handbook has been prepared by a number of persons, whose competence is beyond dispute; and the thanks of all who find it useful are due to Mr. G. F. Hill (who has acted as general editor as well as part author), Prof. W. M. Flinders Petrie, Mr. D. G. Hogarth, Prof. J. L. Myres, Mr. J. G. C. Anderson, Mr. J. P. Droop,

Prof. R. A. S. Macalister, Mr. H. R. Hall, Mr. A. J. B. Wace, Mr. O. M. Dalton, Mr. R. L. Hobson, Mr. E. J. Forsdyke, Mr. A. H. Smith, Mr. R. A. Smith, Mr. A. B. Cook, and Prof. G. A. Cooke. Each contributor has been left considerable latitude as to the method of treatment of the subject allotted to him, and no attempt has been made to bring the various sections into uniformity of pattern. Owing to Prof. Petrie's absence in Egypt, it has not been possible to submit final proofs of his contributions to him.

Suggestions for improvement in future editions will be welcomed, and will no doubt be forthcoming as the result of experience. Meanwhile it is hoped that this little book will accompany many travellers in foreign lands, and that the labour expended on it will bear fruit in the improved observation and record of archaeological data, in establishing sound principles for the administration of antiquities, and in enforcing proper methods of excavation and conservation. It may also be found of service by those who study the results of research as they appear in museums.

F. G. KENYON.

1920.

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Victoria and Albert Museum .	E. R. D. Maclagan, C.B.E.
<hr/>	
Colonial Office	G. L. M. Clauson, O.B.E.

PART I

CHAPTER I

INTRODUCTORY

THE hints which it is the object of this volume to convey are not meant for experienced archaeologists. They are rather addressed to those who, while anxious to observe and record the antiquities which they may see on their travels, are likely, owing to lack of training, to miss things that may be of importance, or, having observed them, to bring home an imperfect record. It is hoped also that they may catch the attention of some of those who are not interested in the subject, but, coming into possession of antiquities, may unwittingly do incalculable harm by allowing them to be destroyed or dispersed before any record has been made.

Most, if not all, of the countries with which we are concerned have their Laws of Antiquities. It cannot be too strongly insisted that those laws, even if they might be better than they are, should be obeyed by the traveller. He should familiarize himself with their main provisions, which are summarized in an Appendix. The traveller who makes it his object to loot a country of its antiquities, smuggling objects out of it and disguising the sources from which they are obtained, does a distinct disservice to archaeological science. Although he may enrich collections, public or private, half or more than half of the scientific value of his acquisitions is destroyed by the fact that their provenance is kept secret or falsely stated. Such action is equivalent to tearing out whole pages from a history and destroying them for ever, for each antiquity, whatever it may be, is in its way a part of history, whether of politics, arts, or civilization. For the same reason anything like unauthorized excavation, especially by unskilled hands, is gravely to be deprecated. To dig an ancient site unskilfully or without keeping a proper record is to obliterate part of a manuscript which no one else will ever be able to read. The tendency of recent legislation is to allow more generous terms in the matter of licences for export to excavators and collectors, and the harsher provisions of some of the existing laws are likely soon to be amended.

Before leaving home, the traveller will be well advised to make inquiries at the museums or at the head-quarters of the archaeological societies which concern themselves specially with the places which he intends to visit. A list of these museums and

societies is appended to this section (p. 10). It is hardly necessary to warn him that archaeological training cannot be acquired in a few days, and that he will have to buy his experience in various ways; but the more time he can devote to working through the collections in this country, the more useful will be his observations abroad. He will be able to learn what kind of antiquities it is especially desirable to look for, not merely with the object of filling gaps in the public collections, but for the advancement of archaeological knowledge in general.

The object of archaeological travel and excavation is not to collect antiquities so that they may be arranged according to the existing catalogues of museums, but to collect fresh information, to amplify and correct what we now know, to make our knowledge of the past more complete and useful.

On arrival in the country of his choice, the traveller is recommended to continue at the National Museum the study, which we suppose he has already begun in the museums at home, of the kind of antiquities which he is likely to come across. But he should also take an early opportunity of getting into touch with the local British Archaeological School or other similar institution, where he will receive advice what to look for and where and how to look, and assistance in procuring suitable equipment. Thus the traveller who starts from Athens or Jerusalem should apply at the British School of Archaeology. He may there, if he desires, receive instruction in any of the methods described in Chapter II, in which a little practical demonstration is worth pages of print, and will be given all possible assistance in obtaining such articles of equipment as are available on the spot. (Photographic supplies and all scientific instruments should be brought out from England.) The best maps of the district will also be accessible for examination (but the traveller is recommended to make inquiries in this respect before leaving England); the libraries will provide the literature dealing with the routes he proposes to take; and such a collection as the type-series of pottery and the Finlay collection of prehistoric antiquities at the British School at Athens may be useful to supplement his previous studies at museums, and enable him to observe with intelligence the potsherds, &c., that he may find on an ancient site. In return, he will be expected to report his results either to the School or to some other scientific society or museum at home. It should be unnecessary to remind him that the conditions of the law of the land relating to the reporting of discoveries to the competent authorities should be strictly observed. Such authorities should also be informed of any destruction or removal of monuments which may be noticed.

Another matter which should not be neglected is the obtaining of such licences as may be required by law for the acquisition in the country or export therefrom of objects of antiquity. Advice

on this matter can be obtained at the local School or National Museum.

It is possible that the traveller will begin his journey at a point other than the capital. Inquiries should be made at the London head-quarters of the Schools concerning residents at such places who may be able to give advice to intending travellers.

The traveller will doubtless bring back with him such antiquities as he is permitted to export. A word of general advice on this matter may not be out of place here. The essential value of antiquities, apart from their purely artistic interest, lies in the circumstances in which they are found. The inexperienced traveller is apt to pick up a number of objects haphazard, without accurately noting their find-spots, and even, getting tired of them, as a child of flowers that he has picked, to discard them a mile or two away. If the first act is a blunder, the second is a crime; it is better to leave them lying in place. For the same reason, it is highly desirable that objects found together (e.g. the contents of a tomb) should as far as possible be kept together, or at least that accurate record of the whole group should be made, since the archaeological value of a find may depend on a single object, apparently of small importance. Nothing, for instance, is more common, or more distressing to the numismatist, than the division of a hoard of coins among various persons before they have been examined by an expert. If they must be divided, good impressions should at least be made by one of the methods described in Chapter II, and, if the coins are of gold or silver, the weights should be noted. This should be done even if the coins, to the inexperienced eye, appear to be all alike. The knowledge that any coin from a hoard may be of greater value than a similar coin found singly may induce finders to report such finds before dispersing them. What applies to coins is equally applicable, in various ways, to all classes of antiquities.

It is assumed that the primary object of the traveller is not speculation in the pecuniary value of the antiquities that he may acquire, although he may be not unreasonably inclined to recover some of his expenses by disposing of objects which do not appeal to him. Should that be so, although the authorities of public museums obviously cannot be agents or valuers in such transactions between the owner and private collectors, they are as obviously willing to consider offers which are made to their museums in the first instance and, if the objects are not required by them, to advise the owner in what quarter he may be likely to meet with a purchaser.

CHAPTER II

METHOD

1. Outfit.

THE following are essential :

The best available maps of the district. Field-glasses; prismatic compass; protractors for plotting angles on plans; plotting-scale in millimetres; compasses and dividers; one or two 20-metre tapes and two or three folding metre or two-metre rods; note-books and drawing-blocks of millimetre-squared paper with faint blue rulings. Paper for wet and for dry squeezes, and brushes for same. Pencils, indelible and ordinary (the grade of the latter depends on the climate, but HB and H are most generally useful), ordinary and Indian ink (waterproof), ordinary and mapping-pens. For marking objects, small tag labels, rolls of adhesive paper, and small specimen-envelopes (wage-bags). A good knife with non-slip blade, e.g. a Norwegian knife. An aneroid barometer and a theodolite for accurate survey work, not always essential (a box sextant will usually suffice). A good camera. Boxes (sets of cardboard folders in various sizes) are advisable for packing antiquities, but hardly practical for a journey.

Photographic.¹ In the selection of a camera much will depend upon the nature of the work to be undertaken, the conditions of travel, and the climate to which the camera will be exposed. For accurate work a stand camera is always to be preferred to one of the hand variety, and care should be taken to choose an instrument that is strongly made and of simple construction. The essentials of a good stand camera are that it shall be rigid, possess a rising and falling front, a swing back, and bellows which will be capable of extension to fully double the focal length of the lens to be used with it.

The rising and falling front gives a power of modifying the field of view in a vertical direction. The swing back preserves the verticality of architectural subjects. In some cases, when used with the pivots vertical, it is a help in focussing the subject. The possible extension of the distance between the lens stop and the ground glass to twice the focal length (which is as a rule

¹ Prof. Petrie and Mr. Woolley are not responsible for this section, which is due to the kind assistance of some professional photographers. Hence some slight discrepancies between this section and section 6.—Ed.

the distance between the same points, when a distant object is in focus) enables a small subject to be reproduced in natural size.

For work abroad where extremes of temperature or excessive variations have to be contended with, a special tropical camera is supplied by most of the leading makers. Its well-seasoned hard wood and metal-bound joints render it suitable for hard wear, and reduce the risk of leakage through warping or shrinkage. The tripod stand should be of the so-called three-fold variety, with sliding legs which can be adapted to broken ground. If a loose screw is used for attaching the camera to the stand, a spare screw should be kept in reserve. It is important that this stand should be strongly made, and light patterns subject to undue vibrations in the wind should be discarded. For photographing small objects in the studio, a small table is more convenient than a tripod support. If the camera will not sit flat on the table, a bed can easily be designed for it. Better work will be done if this is prepared in advance than if an improvised support is used. As regards the size of the outfit, quarter-plate ($3\frac{1}{4} \times 4\frac{1}{4}$ inches) will usually be found to be large enough for the traveller. For anything in the nature of studio work in a museum or in connexion with an excavation a half-plate camera ($6\frac{1}{2} \times 4\frac{3}{4}$ inches) is more satisfactory. Where a hand camera is preferred it should be one capable of adjustment of focus, and here again, strength and simplicity should be looked for. It should be provided with effective tripod legs, for studied exposures. Plates or flat films are preferable to roll films which are difficult to manipulate away from home. Flat films are less bulky and less breakable than glass, and can be sent by post. They are supplied by the makers in packs of 12 for daylight loading into a film-pack adapter, which must be provided to take the place of the ordinary dark slides for glass plates. The lens should be a modern anastigmatic by a good maker. A focal length of about six inches will be best for a quarter-plate camera. A bad lens makes success impossible even by accident.

The stops will probably be of the iris pattern, incorporated in the lens and so not likely to be lost, as often happens with loose stops.

A few words on the theory and use of the stops and on the F-notation may be of service. The speed of a photographic lens depends on the ratio of the effective aperture to the focal length. Thus any two lenses used at apertures of F/8, that is at apertures having diameters one-eighth of their respective focal lengths, should be of the same speed, though both lenses and apertures may be very different. In a given lens, the speed varies directly with the area of the aperture admitting the light, that is with the square of the diameter of the aperture.

The series of stops usually employed is calculated so that each aperture is half the area of the preceding. Stated in terms of the focal length they are known as $F/5.6$, $F/8$, $F/11.3$, $F/16$, $F/22.6$, $F/32$, &c. Since the squares of those numbers, 31.4 , 64 , 127.7 , 256 , 510.7 , 1024 are approximately each twice the preceding number of the series, the apertures (F (ocal length)), divided by the successive numbers as denominators, are each half the area of the preceding and require twice the exposure. $F/16$ requires twice the exposure of $F/11.3$, and four times that of $F/8$, and so throughout the scale.

Stops are used to regulate either 'depth of focus' or length of exposure. The 'depth of focus' means the distance before and behind the point in theoretically accurate focus, at which objects are sufficiently focussed, for the purpose the photographer has in view. This length is greatest when only the central portion of the lens is in use. It is greatest with a pin-hole, and least with a full aperture. Hence a small stop is required if the picture is to include near and far objects, while a large aperture may be used if all the subject is far enough away to be in clear focus—say more than 25 feet—or if it is a flat surface. The small stop is also required when the rising front or the swing back is in use. The power of regulating the time of exposure is convenient for shortening long exposures in dark interiors, or for lengthening inconveniently short exposures in a bright light.

In practice it will be best to become familiar with the use of about three stops, say the full aperture (perhaps $F/5.6$ or $F/8$), $F/16$, and $F/32$.

For judging long exposures, the use of an actinometer (issued in many inexpensive forms) is helpful.

A telephoto attachment increases the photographer's power of rendering distant details on a large scale. The results are greatly superior to enlargements of a small plate. It is, however, useless in a wind, unless the camera is specially supported, and is otherwise rather tricky to use. The traveller is strongly advised to master its management at home. It should be adjusted by the maker to the camera for which it is intended.

Unless a photographer's dark room can be had the developing of the bulk is best left until the return home (see however p. 29), but tests should be made to see that the exposures are correct. A piece of ruby fabric or ruby paper tied over an electric light will give a safe light after dark, and 'Scalol' or some such one-solution developer, which requires merely the addition of water, will give all that is needed for developing.

In warm climates, use cold water. If it is not cool enough, the gelatine of the negatives may give trouble. In that case, get colder water, and use an alum bath. If water is precious, plates can be sufficiently washed by moving them forward

in succession through half-a-dozen soup plates filled with water.

If habitual use is not made of tabloid developers, &c., it is advisable to have some in reserve, for use in the case of broken bottles and spilt solutions (see however p. 29).

Useful notes and maxims.

An over-exposed plate gives no dark shadows in the print.

An under-exposed plate gives no high lights. When in doubt, choose the risk of over-exposure.

To test the safety of your camera—Half draw the shutter, and expose part of the plate in the camera, in the sunshine, without uncapping the lens, and develop.

To test the safety of your red light—Expose a plate, divide it into two, develop half in the dark, and half for the same time, with the same solution, by the light you are testing, and compare the results. This test is worth making, as photographers are apt to give themselves much discomfort from exaggerated caution.

2. Itinerary.

Where there are efficient maps the only need is to mark in the position of any antiquities, by cross-bearings to clear points, with the compass, drawn in with a sharp pencil. Where the maps are too small, or deficient, a continuous register of time should be made, noting the minute of starting and of stopping; this over known distances will serve to give the value over the unknown. Note whether mounted or walking, and the compass bearing of the track; also the bearings of known points around, whenever stopping. Without any known bearings pacing and compass used carefully may go over the roughest ground without five per cent. error in the day.

It is better when on unknown ground to plot a map as you go, so that no misunderstanding of notes can arise after. If a squared block cannot be used, at least draw the bearings and distances roughly, writing in the amounts. This should be plotted up accurately in the evening. A photograph may be unintelligible later in its detail. It is best where known features, a temple, tombs, &c., are in a view, to sketch the outline when photographing, and write in the details, so as to give a key to the photograph.

Inquire about antiquities whenever stopping. When camping, villagers usually come up to see who it is; then tell them the directions of the places around. They will ask how you know; show them the map, and they are puzzled; talk over all the names a few miles round, and then anything notable in the district may be remarked, and inquiries made. Several men

together help each other to remember, and bring out more remarks. Sometimes an intelligent man will describe all the antiquities he knows in the district: this should be followed closely on the map, and difficulties resolved at once, so as to get a clear record noted.

Of course, enormous exaggerations are met with, and not one report in ten will prove to be anything. Tracking up the source of bought antiquities is one of the best methods, and the one by which Naukratis was found.

If travelling by camel, it is practicable to diverge widely on foot, if objects are looked for well ahead. A foot track diverging 45° , and then converging likewise, will easily keep in touch with a baggage camel. Fix on the camping-place in the morning, and let every one know of it, so that if accidentally parted all can rejoin by night.

3. Recording.

Buildings or standing ruins. Fix position by bearings to mapped points: also note bearings of any prominent feature nearby which may serve to find the position again. On a squared block sketch a plan, north at top of paper, roughly to scale on the basis of two or three preliminary measurements, adding detail by eye and assuming right angles to be true: then measure with rod or tape all dimensions and enter on plan, not forgetting the thickness of walls: where possible take running measurements, pegging the tape down by its ring, and reading off the position of corners, doors, &c., in continuous measurements, not in short separate lengths. Take diagonal measurements across the main spaces. If possible, work the plan out on the spot on a separate sheet, using compass and dividers to correct angles by means of the diagonal measurements: then errors can be checked and corrected and omissions made good. If the site is too large for tape work, measure a base with the tape and get the principal points with the prismatic compass and fix these accurately on the block with the protractor: details can then be worked out on separate sheets. Enter on the plan the bearings of the principal wall.

Town mounds. Estimate height over bare land outside; eye height is a trifle over five feet. At the foot of the mound see where the horizon cuts the shoulder of it to find eye height; walk up to that point, and sight another five feet; so on, till you see over the top. If there is any section, by a stream side, or digging, or land-slip, look for strata, stone or brick walls and floor levels, and for any distinctive potsherds; observing levels as before. Look all over the top for potsherds, to find the latest period of the town. Look around the mound for any early potsherds. Sherds on the slopes are worth less, as they

have probably slipped down. Red burnt brick in Egypt is all Roman or Arab; in Greece and Asia Minor, red brick and mortar is Roman, Byzantine, or later.

Walk to the middle of the site or mound, and see its extent. Then walk round the wall line, or circuit of it, pacing and compass noting, to sketch the shape and size of the site: especially look for any straight lines of wall showing. Sometimes a mud-brick wall may be entirely denuded away, yet the position is shown by the sharp edge of the strew of potsherds on the surface.

Look for any slag-heaps; these may be the remains of lime burning, and show where stone buildings existed; sometimes foundations still remain. Look for any recent pits or trenches; these show where stone or burnt brick has been dug out in modern times, and may give the position and plan of a temple or church.

See if any rubbish mounds can be traced outside of the town site; usually marked by a gentle walk-up slope, and a steep thrown-down slope, and mainly consisting of pottery, e.g. Monte Testaccio at Rome, and mounds east of Cairo.

Town sites rise in Egypt about forty inches a century, by the dust, rubbish, and decay of mud-brick buildings. In Palestine the rise is five feet a century, owing to the rains, or half of that in the dry south.

Cemeteries. These have generally been more or less plundered; if recently, the pits show; if anciently, there are scraps of pottery lying about. If there are pebbles or marl thrown up from deep levels, there is evidence of tombs, and they may be unplundered. Blown sand or grass may hide all trace of tombs. Sometimes the whole masonry of a tomb may have been removed, and the gravel filling-in have spread so uniformly that there is no sign of building, although a course or two of stone may yet remain under the surface. The surface of the ground should be closely looked over at sunrise or sunset to show up the slight hollows or ridges by the shadows. After rain differences will often appear in the drying of the ground. In certain soils the vegetation may give a clue, weeds with long sucker roots only growing where the earth has been disturbed to some depth. Ask any one near a site if he knows of any one getting stones, or bronze, or plunder from tombs. Anything found will probably be greatly exaggerated, and no clear idea of the time of finding can be reached; yet any such detail may be useful.

Any large town site must have a cemetery, which is near it in most cases. In Egypt, the towns being in the inundated land, the cemeteries are at some miles distant on the desert. The prehistoric cemeteries may be anywhere; the historic cemeteries are usually round the ends of the dyke roads, which were thrown up in the early dynasties as irrigation dams, and still serve as

the roads of the country. In Greek lands cemeteries are always outside a town, usually by the side of the roads.

Caves should always be carefully explored; the roof and sides searched for inscriptions or carvings; rock pockets in the sides examined; and the floor dug over for potsherds and any small objects. If there are different strata these should be each removed separately, and the depth and positions of objects noted.

4. Methods of Planning.

Though we cannot here give full technical details of all the methods for plans and surveys, it will be useful to state the scope of each method, so that they may be kept in mind, and whichever is best suited to the individual and his work may be provided for.

1. Plain pacing. After pacing lengths of a few hundred feet, up and down hill and flat, tape the distances, and learn true value of pace. Careful pacing can be done to one or two per cent. of the whole; and properly used, in triangles, may give a useful plan.

2. Pacing and compass. This covers large spaces quickly, but the compass is less accurate than the pace.

3. Tape. Lines of taping must be well planned, with triangle ties to secure the angles. Pulling up straight is difficult in a wind, especially on broken ground, and one per cent. error is quite possible then. When working alone peg the tape down by the ring, or round a stone.

4. Tapes and cross lines. A tape may be stretched along the ground and the position of points on either side of it fixed by rectangular offsets: as it is difficult to get always a true right angle, a few diagonal measurements should be taken to secure accuracy. Or, two tapes may be pegged down at right angles and measurements taken to these simultaneously, the recorder holding the zero ends of two tapes over the desired point and the assistants reading off the length to the fixed tape and the distance along this from the right angle: if strings are substituted for the fixed tapes, the assistants must be trusted to place their tapes at right angles to the strings. To lay out the fixed tapes or strings at right angles to each other, measure off a triangle whose sides are 3, 4, and 5 metres in length respectively—this is done by holding these lengths of tape together and stretching taut: the 3 and 4 metre sides will be at right angles. Or lay a block of squared paper below the strings to adjust them.

5. Plane table. Excellent for some ground, where objects are visible from a distance: otherwise it requires a marker put up at every point to be fixed. Cumbersome to carry, much slower than 4.

6. Box sextant, used as giving angular accuracy to any of the foregoing; most useful with taping, and in following.

7. Sextant and three points. The most rapid accurate method is to adopt three points visible all over the ground (as trees or chimneys) or set up three markers. Find shape and size of this triangle. Then at any point take two angles visible between the points, and this fixes position of observer. A large site may have forty points fixed in two hours thus to about 1 in 1000. For detail and plotting see Petrie, *Methods and Aims in Archaeology*.

8. Theodolite. For the most accurate work a theodolite is used, giving points to about 1 in 5000. It is almost essential for any astronomical meridian or latitude.

None of these methods necessitate any helper, except 4. The observation is from the point to be fixed in 1, 2, 3, 4, and 7; but it is *to* the point, needing signals or visible features on the points, in 5, 6, and 8, and for those methods a large stock of rods must be taken, and the whole ground gone over, before the work of observation; such methods take far more time than the others. The able surveyor will know by instinct how to use all the inferior methods as supplements to the higher, whenever time demands and accuracy allows.

When first searching a site, note the direction of any wall to the horizon point, and so see if other walls are parallel.

In all cases a plumb line is wanted for alining foundations and scattered blocks. Always carry six feet of thin string, and pick up the nearest suitable stone for a weight, up to three or four pounds in a wind.

5. Drawing and Copying.

Inscriptions. If there is any chance of being interrupted by any claimant, or by crowds, always make a hand copy at once, as quickly as possible. After a squeeze or photograph is taken, the hand copy is still often of value to explain positions of squeeze slips or detail of photographs.

If there is no chance of interruption, then a carefully drawn copy full size should be made. For this a dry squeeze is the ground work. Lay a sheet of thin paper, such as thin wrapping or plain paper, on the stone, and press all the letters over with the fingers, so as to make a sharp bend; a break in the deep hollows does not matter. Then, putting the paper on a drawing-board or sheet of millboard, cock it up so that the shadow of the squeeze is seen, and draw over the lines (starting at right base), referring to the stone whenever uncertain.

If there is time, a wet squeeze is preferable. This should be

made with a single sheet of hand-made long-staple paper beaten on with a soft brush: accidental holes can be patched with small bits of the same paper. It must be allowed to dry slowly, then removed and the outer face sized (white of egg works well). The squeeze is then held against the stone and the signs outlined in pencil (or this can be done before sizing). Then Indian ink or good black ink should be used; if the signs are in relief the background is blacked in and the details of hieroglyphs drawn on; if they are incised the characters are inked and the ground left white. When a sign has flaked away the place corresponding to the broken surface should be hatched on the paper: if, on a broken surface, a sign can yet be traced, it should be outlined and the surrounding ground hatched or, if the character be doubtful, the ground should be hatched, the apparent sign left blank but not outlined.

This method gives a better representation of the stone than any other, and has the advantage that it can be greatly reduced for reproduction without loss of clearness.

Note that the edges are usually rather worn, and the drawn lines should be inside the squeeze lines. If the stone is large, several lesser sheets are best.

Where there is writing, or the relief is too faint to squeeze, put the paper immediately below the first line, and draw it sign for sign, so that the spacing is preserved and no omission is possible. Fold back the paper as each line is copied, and so always keep the copying close below the line of inscription.

If the signs are in an alphabet that is not familiar, refer to the table of alphabets.

Sculpture in low relief can be copied best by dry squeeze. As the connexion of the sheets used should be exact, put up the first sheet truly vertical, and mark little pencil crosses at the corners on the stone. Then the corners of successive sheets should be fitted into the angles of the crosses. When inking in the pencil drawings, do not carry the lines within two inches of the edges of the sheets. Then place sheets edge to edge, adjust them to fit as best they may, weight them heavily with books, turn back one edge and weight it, and then slip a strip of wetted adhesive paper half-way under the edge that is down; at once liberate the edge that is up, and *dab* (not rub) both heavily down on the adhesive. This makes a joint free of cockling, and when dry the inking can be completed across the joint. Where there is any colour remaining on sculpture or inscription, only dry squeezing is permissible.

Where signs are worn or decayed it is needful to try various lighting. This can be done in the open air, by shading the part by the hands placed around it as a sort of tube, the head blocking out the light over the tube. Then quickly raise a

hand alternately, so as to reverse the oblique lighting, and watch the effect on the sign.

If the stone has not too tender a face, careful washing often brings out an inscription; and in such cases it is usually far easier to copy from a wet than from a dry stone.

If reliefs have been much weathered they can be made plain for photographing by laying horizontal and covering with sand; on wiping away the sand from the relief the ground will be left flat sand, so hiding the confused hollows of weathering.

The safest way for drawings to travel is to post them at the nearest post direct to where they will be worked up. The Postal Union takes rolls of 20 cm. thick, 60 cm. long, up to 5 kilos as parcels, or rolls of 10 cm. thick, 75 cm. long, up to 2 kilos by book post open at ends. This is far better than carrying rolls by hand.

Wet squeezing. Where there is no colour, and the stone is strong and not crumbling, a wet squeeze is the best copy. There are three purposes for it, and the method differs for each: (1) thin single sheet kept fresh on the *outer* face for photographing later; or (2) single sheet well beaten in and patched, depending on pricking the outlines and hand-copy from it, or blacking over the relief on the *inner* side and photographing; or (3) double sheet hard beaten, and patched in the hollows, for plaster casting afterwards.

For (1) there is no need to get an impression of the hollows to the bottom, and the face of the paper should be smooth. A soft paper, with little or no size, and a soft clothes-brush will do well for this. The sheet should cover the whole inscription, or have as few joints as may be. The stone should be dabbed with a wet brush so as to saturate the face, the sheet of paper well soaked in water should be laid upon it, taking care not to leave bubbles, and then dabbing firmly with the brush will drive the paper into the hollows. If the stone is polished or very smooth, it is needful to peel off the paper while wet by holding two corners, and lay it reversed on a flat surface to dry; if left on the stone the contraction will destroy the impress. Out of doors the paper can be held down by pebbles around it, or by sand on the edges, to prevent the wind catching it.

(2) The stronger squeeze should be of a tough paper with moderate sizing. Cut the paper to the form of the stone. Thrust it into a pail of water, knead it about vigorously, roll it into a ball and pummel it, so as to break the grain and let the water well into it. Then wet the stone, shake out the paper like a wet handkerchief, full of creases, lay it on the stone and begin to beat it in with a hard, long spoke-brush. A few strokes round the edge will catch it down so that the wind does not disturb it. Then begin to beat it heavily along the top

edge; beat it to a pulp, and patch with strips left soaking in the water wherever breaks occur. If the stone is porous the paper may part from it, especially if expanded by beating; the only course then is to slush more water on the face so that it will go through the breaks and hold the paper down again. It may be needful to slit the paper to let the water go below it. Beat down again, enough to fix it.

(3) For casting purposes a final backing sheet, moderately beaten on, is needed to hold the squeeze together and stiffen it. Either (2) or (3) can be left on the face of the stone till quite dry, and then carefully detached by lifting up from one corner, and slipping a dinner-knife or a slip of wood under the paper to lift any part that sticks.

Stiff squeezes as (3) must be packed flat; thin, as (1) and sometimes (2), may be rolled in a large curve, but this always deteriorates a squeeze.

For plaster casting, a squeeze should be heated on a stove and brushed over with melted paraffin, or better wax, sufficient to cover the face without choking the finer detail. Before each cast the face should be lightly oiled with a tuft of wool.

Small objects can be copied by a thin paper squeeze, and the squeeze may be mounted by pasting a card and lightly pressing the squeeze back down on it. This will take out all cockling and make it lie flat for photographing.

Tin-foil is very handy for squeezes, and may be saved from chocolate for this. Press it firmly on a coin or seal with a tuft of wool, or beat it with a soft tooth-brush, being careful to avoid creases. The foil should then be floated on water, hollow back up, and blazing sealing-wax dropped into it to back it. The resulting positive can be then stuck on card.

For plaster casts of coins the face should be dusted with French chalk, as also a smooth bed of plasticine; the coin can then be pressed in safely without any possible risk, and afterwards plaster cast in the mould. Sealing-wax is said to be sharper, but there is a risk of its sticking to the coin. If it is used, breathe hard on the coin, or wet it, before impressing; and when first set lift it slightly to detach it, and then replace till cold.

Or tin-foil may be used, as in making positives; but, instead of floating on water, press plasticine on the foil while it is still on the object.

For curved surfaces, as cylinders, any of these methods can be used; the plasticine is the more successful.

A fairly satisfactory way of making a record of coins is to wet the coin and lay over it a cigarette-paper, folding the corners behind and pressing the paper firmly into the coin—or the paper may be wetted and the coin left dry. Then with a lead pencil make a rubbing of the coin as the paper dries: the

rubbings can be pasted on sheets of paper and the necessary notes written against each.

In all casting of plaster on a small scale, use a soft camel-hair brush. Mix the plaster in the palm of the hand with a knife, take up some of the wettest to brush over the face of the moulds (a dozen scarabs or small coins done at once); then put the brush in water, and take up thicker plaster with a pocket-knife to drop on as a backing. This avoids air bubbles without using too weak a plaster.

Copying hieroglyphic inscriptions. Where possible a wet or a dry squeeze should be taken of any inscription. When hand copying is necessary, the main matter is to get the cartouches of king's names accurately, and the date at the beginning, examining specially whether single strokes, IIII , have been connected above, nn , forming the ten sign. The main difficulty for any one not knowing the 800 signs is to distinguish between those that are alike, especially when damaged. For this purpose the commonest signs that may be confused are here placed together, so that the essential points of difference may be noticed. A small cross is placed here by small points of distinction which might escape notice.

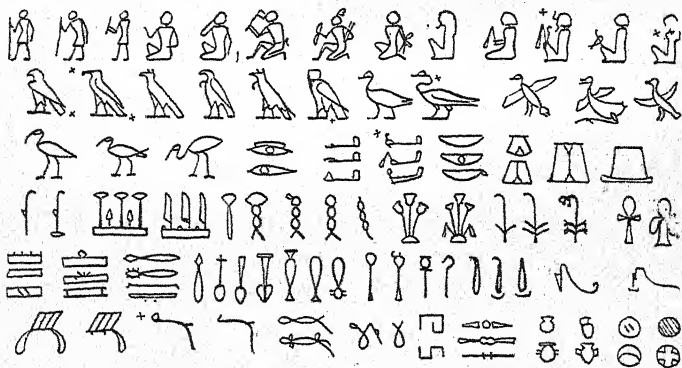


FIG. 1. Some Hieroglyphic Signs liable to be confused with each other

6. Photography.

The camera and material have been described under outfit.

Lighting and preparation of objects is a main element of success. When first looking over any ruins, make a list of every view wanted, with the time of day when the sun will be

right for it. Then follow the time-table, and so get the best lighting all in one day.

For movable stones or figures place them in half-shade, as a doorway, and then tilt every way until the best lighting is found, fix them in that position, and then set up the camera square with them.

The camera should usually be fixed to look downward vertically, and then variation up to 40° can be got by the legs. Hold the camera in the right position, keeping the legs off the ground, and then drop the legs to find their own place; thus very skew positions can be fixed quickly.

For a $\frac{1}{4}$ -plate camera a ball-and-socket joint fixed on to the tripod-head, for a $\frac{1}{2}$ -plate camera a wooden turn-table hinged and with sextant racks is useful, enabling the machine to be fixed quickly in the same plane as the object.

The best for field use is a camera joined with a box to hold fifty films, and a dark bag on the side for shifting them by hand without any carriers. For taking objects there should be on the camera graduated scales giving distances and reductions, so as to arrange the camera before viewing. Thus with a F/100 stop there is no need for sharp focussing.

Small objects are best laid on black velvet, and taken vertically. Scraps of charcoal are useful to prop them in exact positions. A sheet of white paper stuck on a leg of the stand may be useful to prevent shadows being too heavy. Where outline, and not flat detail, is wanted, then a light ground is best; the most perfect is a sheet of ground glass with white paper a foot or two below it. If the ground glass cannot be had, a good substitute—also useful for a camera glass—is plain glass with a sheet of tissue paper (or the packing paper of films) stuck on with paraffin wax.

The dressing of objects to show up clearly is often needful. Incised objects can be filled in with charcoal powder if light, or chalk if dark; in any case a coarse powder, so as not to stain the object. For faint cutting on glass or crystal go over the lines with China ink in a pen, so as to cover them. Harden the ink in the sun, and then gently wipe with a damp finger until all the excess is removed and only the roughness of the lines remains black. On large objects light dust or sand is often useful, to make relief clearer.

If, as sometimes happens, the surface of a relief is hard but so pitted that the design is obscured by accidental shadows the following method is useful. The whole surface should be plastered with finely levigated mud; when this is dry rub away the mud with a flat piece of soft wood, going on until the stone is reached and no more mud comes away; then follow out contours and engraved lines with a pointed stick, working mechanically by the feel of the stone; the result is a smooth

surface with all detail showing. As this is in a sense a restoration the stone ought to be photographed both before and after treatment.

For objects in a bad light, or in the interior of tombs, reflected light must be used. Lids of biscuit tins serve well; a lid in the sun sixty feet off, and another lid reflecting the light on to a wall, will suffice for a two minutes' exposure of a slow plate. Three or four successive reflections into a totally dark chamber will suffice in five or six minutes.

When an important subject cannot be revisited it is well to take duplicates; the camera should be shifted laterally a few inches for a near object, or a few feet for a distant view, and then the two films will form a stereograph, if both succeed.

In arranging groups of small objects, put together what will go in a three-inch circle, and minor pieces around, and then the best in the middle can be printed direct on lantern slides.

Flat films can be kept for some years, either before or after exposure. Two years cause no appreciable change; ten or fifteen years will necessitate six or eight times the exposure. The slowest films are best for keeping, and for safety in handling. The speed H D 30 needs about twenty seconds in sunshine with F/100, or a minute in shadow with F/22.

Films should be developed the night after using, to assure the result and the right exposure. Never fix films in field work, as the hyposulphite will destroy the image unless very fully washed out. Give two waters of five minutes each to remove developer, and dry. Then the films can be left in daylight or sunlight without any deterioration before fixing, which is best done under a running tap. Tabloids are risky, as a fragment may remain undissolved and blacken the film. With a card over the developing tray, the occasional viewing will not hurt in an ordinary lamplight, if direct light is screened off.

7. Preservation and Packing.

In the way of preservation of objects in the field nothing more should be attempted than is absolutely necessary to ensure their safe travelling to a museum, where proper treatment can be given under suitable conditions.

It is needful sometimes to remove salt from limestone immediately. The only right way is to lay the stone face down on a sand bed kept saturated with water. The salt will all come out on the back of the block, and can be brushed away. If this cannot be done, plaster wet sand on the face of the stone, an inch thick, and let it dry on; when cracked off it takes away all the salt from the face of the stone.

The necessary materials for strengthening are paraffin wax and a solution of celluloid in amyl acetate and acetone—the

two last in equal proportions, the celluloid according to requirements. The paraffin, if required on the surface, is well laid on as a butter (half benzol) spread with the finger, and then warmed to fuse it: thin quantities can thus be added.

Fragile objects in bone, ivory, shell, gesso, wood can be hardened with a $2\frac{1}{2}$ per cent. to 5 per cent. solution of celluloid applied with a brush and allowed to sink in, the dose being repeated until the object can absorb no more: a painted surface on wood, plaster, stone, or clay can be preserved with the same solution applied gently with a brush or sprayed on. For *mending* a thicker solution can be used, the fragments having first been strengthened with the weak solution. Shellac or animal glues are to be avoided.

Paraffin wax is invaluable for skulls and skeletons. The wax should be superheated to smoking-point and then splashed on. Mosaic or inlay work can be preserved in the same way when owing to the decay of the ground (wood or other material) to which the encrustation was applied the tesserae have nothing to keep them in place. After the wax has been applied (usually this is best done a few square inches at a time, as the earth is cleared from the surface of the design) strips of linen should be dipped in paraffin wax, liquid but not too hot, and pressed gently on to the waxed surface. The object can then be lifted and the back of it treated in the same way. The method has been used with success for copper statues when the wooden core had perished and the metal was fractured and rotten, and also for skeletons: since the wax and linen may not by themselves be strong enough to allow of such being lifted an outer case may be formed over the waxed linen by pressing on to it overlapping pieces of coarse sacking dipped in thin carpenter's glue (cold) or thin plaster-of-paris. A stone mosaic (Roman), if the cement in which it was set is rotten, can be lifted by brushing over the surface of the tesserae a thin hot solution of carpenter's glue and then pressing on to it strips of sacking or canvas dipped in a slightly thicker glue: when dry the strips can be rolled up like a linoleum round a pole.

Copper objects if showing any soft green decay should be soaked in ammonia for a day or two; this removes the chlorine. They sometimes have to be treated with paraffin wax in order to preserve them from decay: the wax should be as hot as possible so that it may sink well in. If the object be small it is best to dip it in the wax, but it should be thoroughly warmed first so as to prevent its splitting. Glazed pottery, when the glaze is decomposed and scaling or powdering away, may similarly be waxed, but after waxing must be soaked in changing water for two or three weeks so as to remove the salts which cause the scaling: otherwise the salt efflorescence will dislodge the wax and all the glaze will come away with

it. Silver vessels, if much decayed, and copper vessels when cracked or when the metal is thin and rotten, should be strengthened for packing by being waxed and then covered with waxed linen or muslin.

Tempera paintings on mud or on a thin coat of plaster laid over mud should be sprayed liberally with a $2\frac{1}{2}$ per cent. solution of celluloid and a strong paper, first wetted, laid over the face with flour paste: the painting can then be removed from the wall by cutting away behind. Should it be necessary to reinforce, as much of the mud background as possible should be removed and the remainder well soaked with the celluloid solution: a good backing can be made of clean sand mixed with a 10 per cent. solution of celluloid. If the area is large the sand and celluloid backing should be reinforced by wire netting stretched on a wooden frame.

Sculptured or inscribed stones where the surface is very friable and likely to suffer in transport can be treated with celluloid, a weak solution ($2\frac{1}{2}$ per cent.) being first applied liberally so as to sink in as far as possible, and a stronger solution put on as a final coat. Should this result in a glazed appearance it does not matter, as the superfluous celluloid can later be removed by wiping with acetone.

Papyrus rolls should be wrapped in soft tissue paper and packed in cotton wool, one roll to a box: loose fragments in tissue paper and fine cotton wool loosely packed. All treatment of such should be reserved for the laboratory. Inscribed ostraka should be wrapped separately in soft paper and packed in cotton wool.

Clay tablets if unbaked require careful handling. When they are first removed from the soil no attempt should be made to clean them. If they are in good condition they can be cleaned with a brush (a tooth-brush is the best) after being left to dry for some days. Baking, however, is always advisable, and in the case of poorly preserved tablets (i. e. when they are very damp, crumbling, infected with salts, or broken) it is essential. The tablets should be taken from the ground with the earth still adhering to them and packed at once in iron boxes full of clean dry sand. After having been left to dry for a week or ten days they should be put, in their boxes, into a kiln or oven and fired. A heat of 300° F. maintained for 48 hours will suffice, or a much greater heat for a shorter period: the kiln should be heated gradually to prevent the clay splitting, and the boxes should also be cooled gradually for the same reason. After firing the soil breaks away readily from the tablet and the latter can be cleaned with a stiff brush: if necessary the tablets can be soaked to remove salt. In removing the baked tablets from the sand in the boxes care must be taken to keep together fragments: a tablet which in the soil looked intact may have

been cracked into pieces which with firing fall apart, and it is best to stick them together immediately. The best medium is a thick solution of celluloid or one of the commercial glues with a celluloid base, such as croyd.

Packing. Double packing should be the rule. Small objects should be packed singly, or a few at a time, in light wood or cardboard boxes: raw cotton is the best material or cotton wool for fine and delicate objects. The boxes should be put in cases with a good lining of straw or wood wool and enough of the same between them to secure freedom from jar. If the case is large and some of the boxes heavy, divisions should be made with cross-boards: it is best not to nail these through the sides of the case but to grip them in position by means of thin battens fixed to the sides: this distributes pressure, and the boards are easily removed when unpacking. Outer cases must be strong, should have corner-posts inside, and must be secured with iron binding.

For heavy stones loose packing is useless: cushions made of sacking wrapped round straw should be wedged between the stone and the sides of the box. The carved face may be protected by covering it thickly with raw cotton, laying sacking over this, and tying string round to keep it in position. If more than one heavy stone is put in a case they must be kept apart by cross-divisions. Care should be taken to distribute weight as evenly as possible. Stone slabs can be packed face downwards in shallow boxes with no lid but cross-bars nailed across the top, but closed cases are generally preferable if customs examination is not needed.

Pottery need not always be double-packed, but requires much care. All pots should before packing be stuffed with wool, wood wool, or straw, so that if one breaks the fragments will be kept in position and there will not be a space left such as would cause other pots to shake about and break. Straw is best for packing between pots, and should be rammed very hard. Put hard balls of straw in the corners to grip the pots, and leave the sides free. In the case of large pots, cross-divisions in the cases are useful. No pots should come nearer than one inch to the sides of the case and there should be at least as much between points of possible contact if corner balls are not used. The mouths of large jars should be covered with calico tied on, to prevent packing stuff working loose into them. As each layer of vessels is packed the straw between them and the sides of the box should be pressed tightly home with the edge of a board, more straw being added constantly. If rough handling is to be feared the cases ought to be packed inside larger cases with two inches of space all round, tightly filled with straw.

If ancient skulls can be preserved they should be left in a

block of earth to dry slowly; next cleaned over the face and hot paraffined. Then do the same on the back. Lastly, empty the skull by a wire or fork, and, quickly dipping it in a pan of paraffin, take up some inside, and turn it about for an internal coat. For packing make a long box, wide and deep enough for two skulls, divided by partitions to hold eight skulls together. Keep them tight by balls of rag and straw in corner spaces and centre, leaving the skulls an inch clear of the flat sides.

8. Marking of Objects.

The marking of objects is most important and not easy. On metal objects numbers, &c., should be written with Indian ink; the same number should be written either on a tag label strung to the object or on a piece of paper wrapped round it (adhesive paper may be used for this purpose); where objects are put at once in boxes the number should be on the object and on the box. Pottery can be marked with a hard pencil, but as there is risk of rubbing the mark should be repeated on another part of the pot: the marks should not be on the salient part of the vessel where rubbing is most likely. Beads, &c., if strung, should be labelled; if unstrung, kept in a box with their number both on the box and on a piece of paper put in it with them. Stones should be marked with Indian ink or enamel (white enamel for basalt, &c.). For skulls, write with Indian ink on the left side above the ear (this can then appear in a photograph), and repeat the number on the box.

CHAPTER III

A NOTE ON MINES AND QUARRIES

THE ancients worked the various minerals which they required in two ways, either opencast or by means of shafts and galleries. The former are what we should call quarries, but where metal was their object, caves were usually cut out first and then the surrounding rock hewn away; such mines may therefore sometimes be found by the examination of these caves. In a limestone treeless country opencast mines are not difficult to detect, as the hill-shapes are fairly typical, and where a cliff is observed in the side of a hill, it is usually artificial unless it overhangs a narrow valley. The presence of metal is made certain in these cases by finds of slag in the plain, which is fairly conspicuous, and should always be noted and examined.

Shafts and galleries are not nearly so easy to discover. Where there are holes in the rock, they should be examined for traces of pick-marks. Sometimes a slight mound or excrescence indicates an old gangue-heap, and a visit to it will disclose a shaft. Otherwise the archaeologist will seldom light on such mines, unless he has local information as to their whereabouts.

Wherever mineral deposits are known to exist, inquiries should be made of the peasants, who, if Greeks, very often know of old workings in the vicinity. But it sometimes happens, especially in workings of the Bronze Age, that the ore has been taken without a trace remaining, in which case the only indications are slag and deformations in the shape of the hill-side.

New mines are very often old workings reopened, and managers usually are able to give information about ancient mines, and sometimes have collections of pottery or other objects found in them, so that it is always worth while to pay a visit.

The determination whether a mine is really ancient or modern and recently disused is difficult; usually ancient mines are more weathered and overgrown and sometimes local information can be obtained. In Greece at any rate the archaeologist need not trouble himself with medieval mines, as few seem to have been worked at that date.

It may also be useful to give a list of the ores of the principal metals worked in ancient times. Iron ore may occur anywhere, other ores are usually only to be found at or above the edges of intrusions of igneous rock, which is usually easily distinguishable from the country rock.

Iron ores are brown, black, or red-brown. Haematite is fibrous, black or brown. But iron also stains other rocks without being present in sufficient quantity to be worked profitably. The ore is often rather crumbly, and has always a fairly rich colour.

The usual ore of copper is a bright green, quite unmistakable, as there are very few other minerals at all like it; but one must beware of taking a grey-green schistous rock to be copper, as it sometimes deceives if there is no copper about for comparison. Other ores are the bright blue sulphate and carbonate, both very easily seen, and the black oxide. The yellow sulphide, like the silvery sulphide of iron, seems to have been seldom worked, though it often gives rise to secondary carbonate deposits which have now been worked out.

The ore of tin is almost impossible to distinguish, and is besides so rare that the ordinary archaeologist need not trouble about it. Lead, on the other hand, is common, and is either white, often in large silver-like crystals, or red. Zinc, again, is not very easy to find, as it is usually stained with oxide of iron, but when free it is a white crystalline carbonate.

Silver does not often occur native, and in antiquity was normally worked as a product of lead or copper ores. The former nearly always contain it, and the discovery of a lead mine is a fairly sure indication that silver was found there.

Gold occurs native, usually in quartz; but in antiquity a large percentage of the gold came from stream deposits, where the mines have naturally now disappeared, but where the gold can still often be detected in the sand.

Mercury finally has a red ore, cinnabar, rather like red lead, only pinker.

In all cases ore specimens are valuable, as the ancients were usually not capable of removing the impurities, which thus remain and have been found in the analyses of their finished articles. Besides these, slag, also for analysis, and pottery from the mines should be collected.

PART II

INTRODUCTORY NOTE

THE aim of the special sections contained in Chapters III-VIII is to describe, not the objects usually to be seen in Museums, but only such things as will be found lying out on mounds and sites, and are more or less distinctive of a period. Thus certain comparatively trivial objects are named, because they are peculiar to a period, and likely to be found in a casual passage over a site, whereas other objects, common to several periods, are ignored. Only the distinctive, *key* objects are mentioned. The great features of Greek Art, for instance, are not dealt with in Chapter II. Nevertheless, coins when found should be carefully noted. Pottery naturally takes the largest place, as it was abundant, and its fragments are a good guide to period; being practically indestructible and of no intrinsic value they are most likely to be met with. The difference between pottery made with the use of the wheel and that made without is important to be noted. The use of the wheel can usually be detected through the slight inequalities of the clay that make a series of horizontal lines on the inner surface. The diagrammatic representations of the pot-forms characteristic of various periods, and of other objects ranging through a civilization the main features of which can be shown in outline will, it is hoped, be found useful. Simplified tables of alphabets, intended to make it possible roughly to identify the script, if not the date, of an inscription, are also given.

CHAPTER I

STONE AGE IMPLEMENTS

As the development of Flint or other Stone Implements may follow more or less the same course in all the districts with which this volume deals, a general description is given here, to avoid repetition in the special sections.

The earlier periods of man are so remote that geological changes, wet, and decay have removed nearly all his works except the flint tools. It is to these chiefly that we must look for our knowledge of his abilities. Flints are nearly all that we have for the early stages to supply what arts, history, and literature give in later stages. To preserve and deduce all we possibly can obtain from their situation, and purpose, is a main duty to history. To destroy or confuse the evidence, by removing specimens

without a record, or by shifting them to a different place, is a crime in science. As there is no temptation to ignorant peasants to move flints until they are induced by collectors, so the whole fault of the wreckage that has taken place on many sites lies with the plundering collector. No money or reward should be given for any flints; a few fine specimens may be lost, but vastly more harm would be done by encouraging mere raiding.

The periods and styles now recognized in many quarters are shown in the diagrams; and in most cases it is desirable to use the name of the type-station unchanged, even as an adjective. The names are mostly foreign, and in English it is the practice to use place-names as they stand in describing local products: further there is generally some difficulty in deciding on their adjectival forms; and in case of ambiguity, it is easy to add the word 'type' or 'period'. A Chelles hand-axe, for instance, need not have been found in the gravels of the Marne at Chelles.

<i>Style or Type-station.</i>	<i>Geology and Climate.</i>
1. Eolithic (e. g. Kent plateau)	Pliocene: warm
2. Rostrocarinate (pre-Crag)	,, becoming cold
3. Chelles (on Marne, east of Paris)	Cromer Forest-bed: temperate
4. St. Acheul (near Amiens)	Pleistocene: cool?
5. Le Moustier (Dordogne)	,, warm, then cold
6. Aurignac (Haute Garonne)	,, milder
7. Solutré (Saône-et-Loire)	,, "
8. La Madeleine (Dordogne)	,, cold
9. Epipalaeolithic (Mesolithic)	Recent: cool
10. Neolithic (New Stone Age)	,, present climate

Nos. 3 and 4 are Lower Palaeolithic, 5 is Middle Palaeolithic, and 6-8 are upper Palaeolithic or Cave-period. The Capsian culture started in North Africa and spread to Europe in the Aurignac period, but developed on peculiar lines in Africa, where Solutré and La Madeleine are not represented. The name is derived from Capsa, the Latin name of Gafsa in Tunis. Some of these periods were separated by Ice Ages or glaciations, which made human life locally impossible. Four such periods are generally accepted, the two best attested coinciding with part of Le Moustier and La Madeleine. South and east of the Mediterranean there may have been contemporary pluvial periods, with abundant precipitation causing a marked rise in inland waters.

Gravels containing tools may be surface gravels on a plateau. Note then the level, and the relation of them to any cliffs; do they end abruptly at a cliff edge, showing that the valley was filled up? or do they fade away to the edge, showing that they

are older than the valley erosion? Gravels may be the filling up of a valley which was previously eroded. Note the highest level at which they can be traced—often little pockets of deposit, or traces of sandy strata, can be found clinging high up on cliffs—also note the depths in the gravel at which any tools are found. Any shells or bones in the gravels are of the greatest value; the depth at which they are found should be written on them at once, with the locality.

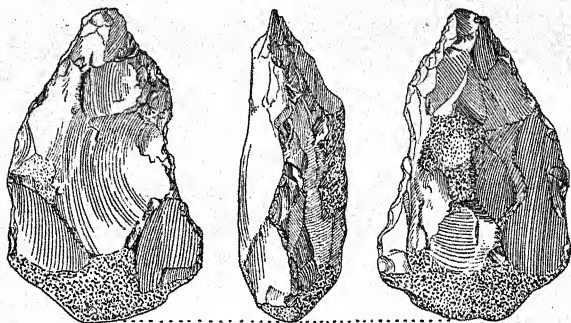


FIG. 2. Hand-axe, Chelles type, faces and side. ($\frac{1}{3}$)

Surface flints should have levels noted on them. If sharp they show that probably submergence has not reached that level since they were left; if worn, then water has been up to a higher level, from which they have been washed down.

Levelling may be read from a contour map, if there is such available. In most countries it must be done by reading feet on an aneroid barometer, set with zero of level scale to 30 ins. or 760 mm. Then visit as soon as possible some point where a level is marked on the map, as a hill top, and read the barometer. This will give the correction to be made to all the previous notes. If there is no level recorded, get down to a stream bed (the larger the better) and read it there, recording the exact place on the map. The level may then be worked out approximately by points above and below on the stream. For accurate reading, hold the aneroid face up, gently tap it, and read; then face down similarly, and take the mean. Be careful that the wind does not blow against any keyhole in the case.

Pencil all levels and localities on flints as soon as found. Ink in the notes on the least prominent parts of the flint, in small capital letters, when in camp, with waterproof China ink.

Styles of flint work. Eoliths of Kent-plateau type are natural slices of crusted flint, generally ochreous, with steep

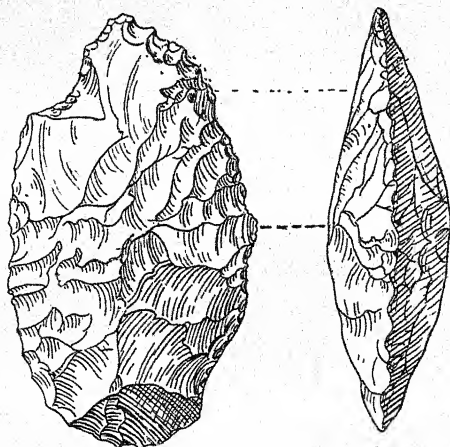


FIG. 3. Ovate hand-axe, St. Acheul type



FIG. 4. Triangular hand-axe,
late Drift

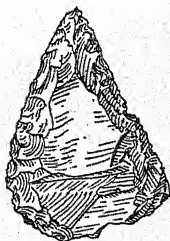


FIG. 5. Le Moustier 'point'

chipping on part of the circumference, produced by blows on the edge of the flat under-face, the upper face being generally convex and crusted. Rostrocarinates, from the base of the East Anglian Crag formations, are much larger lumps with a beak (*carina*) produced by blows on the edge of the flat under-surface: there are generally remains of the dorsal (upper) and ventral (lower) planes, which are nearly parallel. The human origin of all forms from Pliocene deposits is contested by some authorities.

The Lower Palaeolithic is characterized by roughly flaked hand-axes (*coups-de-poing*), generally with patches of the original crust or cortex on or near the butt (Fig. 2). The flakes removed were large and irregular, and the side-edges are generally zigzag, though these become more even in the St. Acheul stage, and sometimes curve in the form of S, more frequently like a reversed S (2). The specimen illustrated (Fig. 3) has both straight and even sides, and an oval outline as usual in this period. Flakes were often used (as distinct from the implements made of the core or nucleus), but are irregular in size and shape. The Middle Palaeolithic (Le Moustier) is marked by a development of the flake industry at the expense of the core-implement or hand-axe; and a peculiar form of core is of tortoise-form (Fig. 6), from the domed upper face of which was removed an ovate flake-implement (Fig. 7) resembling in some respects the principal St. Acheul type. The flake industry predominated throughout the Upper Palaeolithic (Cave period): a key type is the 'point' of Le Moustier (Fig. 5), which was really a double side-scraper (*racloir*) and in outline resembled a late subtriangular form of the hand-axe (Fig. 4), which was worked on both faces; then came the better shaped blades of Aurignac type (Fig. 10) retouched along the edges, and often made into end-scrapers (*grattoirs*) or planes.

Evolution can be traced in the points after Le Moustier: all three figured (Fig. 8) have a cutting-edge with a thickened back or opposite edge as a finger-rest, and a gradual refinement of the type is observed during the Aurignac period. Gravers (*burins*) are also varied and important (Fig. 9, the arrows indicating the direction of the blow (*coup-de-burin*) which removed a slice from the side and produced a chisel-end with two strong points for engraving).

Early Solutré is characterized by leaf-shaped blades (pointed oval to lozenge; Fig. 11), flaked by pressure on both faces: late Solutré has instead of these a tanged point (Fig. 11), evidently for hafting as an arrow or lance. La Madeleine saw a decline in flint work and an increased use of bone, antler, and other materials; but the blades are often of elegant form (like the end-scraper, Fig. 12), and even those with a minimum of work are long and slender, requiring considerable skill to produce. The

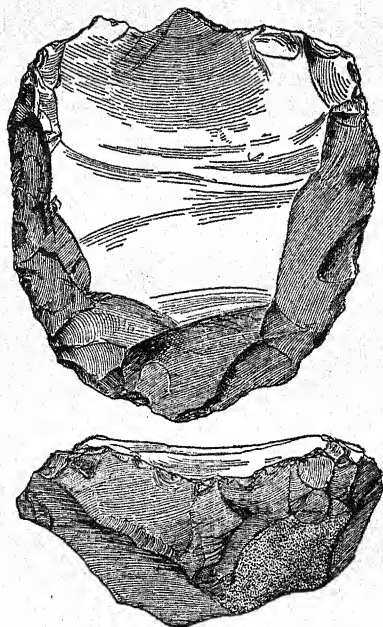


FIG. 6. Tortoise core, Le Moustier type, front and end views. ($\frac{1}{3}$)

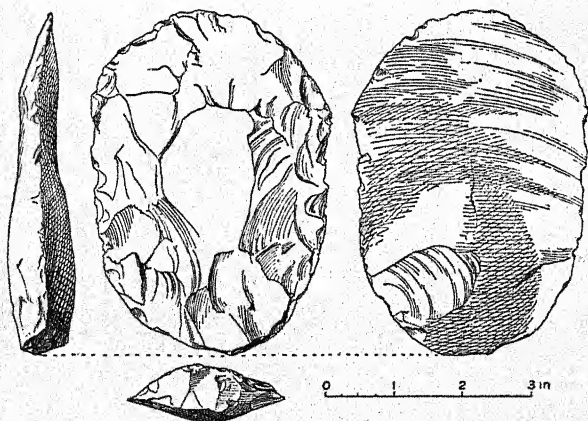


FIG. 7. Levallois flake, front, back, side, and end views

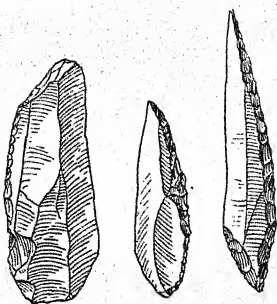


FIG. 8. Abri Audi, Châtelperron, and Gravette 'points'. (2/3)

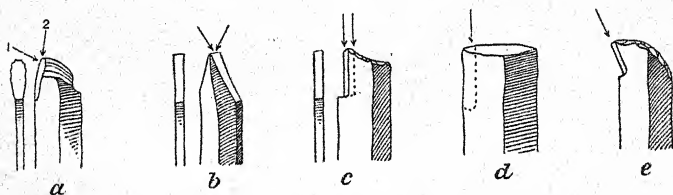


FIG. 9. Various forms of the graver (*burin*)

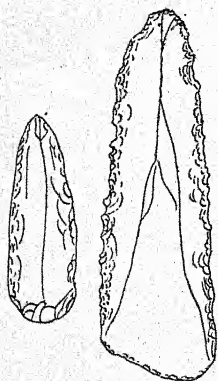


FIG. 10. Trimmed blades, Aurignac type



FIG. 11. Solutré types: leaf-shaped early, shouldered late

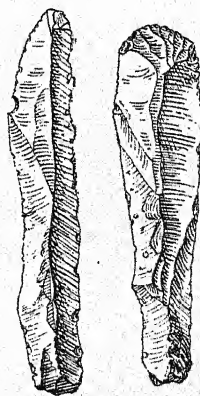


FIG. 12. End-scrapers on blades, La Madeleine type

pygmy industry associated with Mas d'Azil and Tardenois follows, and represents the transition from Palaeolithic to Neolithic. Some of the leading types are figured full-size (Fig. 13). They require careful search, and their purpose is obscure.

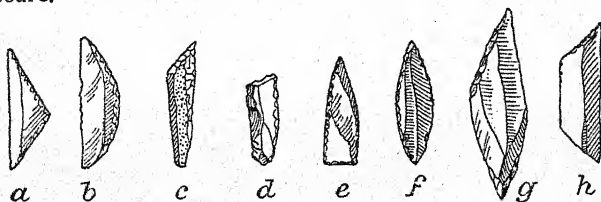


FIG. 13. Types of pygmy implements. ($\frac{1}{4}$)

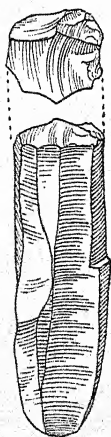


FIG. 14. Obsidian core, with top view. ($\frac{2}{3}$)

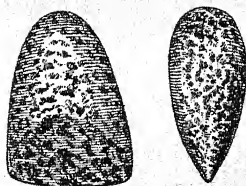


FIG. 15. Stone celt, Ephesus. ($\frac{2}{3}$)

Neolithic specimens are usually found on the surface, but it is a mistake to classify all surface finds as neolithic (e.g. Le Moustier forms are common on the deserts of Egypt and Transjordan). Flakes were in common use, but not so uniform as in the Cave period, nor so carefully worked. The celt appears, either polished (ground on sandstone) or unpolished, of various materials: the broad end is here the cutting-edge, and (unlike the hand-axe) it was evidently meant to be hafted as an axe or adze. Evolution in the form of the celt has been

observed in some parts of Europe, and the various forms of the flint arrowhead arranged chronologically for restricted areas. Both these points are discussed in British Museum publications : *Flints, an illustrated manual of the Stone Age for Beginners*, and *Stone Age Guide*, 3rd edition, 1926.

The above rules do not seem to apply throughout the **Levant**, the Palaeolithic period being hitherto unrepresented in Asia Minor and the Greek islands, though both Drift and Cave-period specimens abound in Syria, Palestine, and Egypt. In the Neolithic native hard stones (diorite, trachyte, basalt, haematite, and nephrite) were used for small and sometimes diminutive celts ; and obsidian (volcanic glass), used freely for flakes and often found as cores (Fig. 14), was produced in Melos and exported extensively. The celts, shaped by grinding and polishing, are generally triangular or subtriangular in plan, with almost straight cutting-edge and rounded butt (Fig. 15) : other types are mace-heads of ring-form, hammerstones and bracers (oblong plates to protect the wrist from the recoil of the bow-string). Obsidian was used well into the Bronze Age, but celts are not found in tombs or habitations of that period, copper being worked in Cyprus as early as 2500 B.C., and in Crete five hundred years earlier.

CHAPTER II

GREECE

[See diagrams of stone implements, pp. 38 ff., of pottery, &c., pp. 47 ff., and of alphabets, pp. 55, 63.]

There are two separate fields of archaeological research in Greece (not including Byzantine and later antiquities): Pre-historic and Hellenic. The period of the former ends about 1000 B.C., and a term may be set for the latter at the formal establishment of the Christian religion in the Roman Empire in A.D. 323.

I. PREHISTORIC

The earliest material is Neolithic, which can be dated only in its latest phases, when it was in contact with Copper and Bronze Age cultures; and these dates vary in different localities. The material also varies locally, and on this basis the Greek portion of the Aegean area is at present divided into four districts: Crete (*Minoan*), the Aegean Islands (*Cycladic*), South Greece (*Helladic*), and North Greece (*Thessalian*). The civilization of Crete was far superior to the others, largely because of its relations with Egypt and Asia, but Minoan arts had little influence in Cycladic and Helladic regions until about 1600 B.C., when they were carried suddenly and completely to the other islands and the Peloponnese, notably to Melos and Mycenae. The subsequent colonial Minoan culture, which ultimately displaced or absorbed all Cycladic and Helladic elements, is properly called *Mycenaean*. The Thessalian district, which includes parts of Phocis and Boeotia, stood apart from Greece before the Mycenaean age. It produced elaborate Neolithic pottery, and lingered in the Stone Age for a thousand years after copper was used in the south. A chronological scheme of nine periods, designed by Sir Arthur Evans for the Copper and Bronze Ages of Crete, is universally adopted:

<i>Cretan Periods.</i>		<i>Years B.C.</i>	<i>Egyptian Dynasties.</i>
Early Minoan	I	3400-2800	I-III
	II	2800-2400	IV-VI
	III	2400-2100	VII-XI
Middle Minoan	I	2100-1900	XI-XII
	II	1900-1700	XII-XIII
	III	1700-1580	XIV-XVII
Late Minoan	I	1580-1450	XVIII
	or II	1450-1375	XVIII
Mycenaean	III	1375-1100	XVIII-XX

This is conveniently applied to the adjacent Aegean districts by altering *Minoan* to *Cycladic* or *Helladic*, and the names are generally abbreviated to their initial letters, M. M. III, M. C. III, M. H. III, &c.

Houses and Towns.

The site of a prehistoric settlement is often marked by an oval mound accumulated by the refuse of successive ages of habitation. The stratification of such mounds affords important evidence of date, and the position of objects found in them must be accurately recorded. The mass is generally Neolithic, but Bronze Age and later material may be expected on the surface. Prehistoric houses were usually built of mud-brick on rough stone footings. Neolithic rectangular ground-plans have been found in Crete, circular on the Mainland. Caves and rock-shelters were also used as dwellings in the Stone Age. Fine ashlar masonry appears in Crete in M. M. I, and rough stonework was in use at all periods, so that it is only possible to date these structures by the small objects, particularly potsherds, found in association with them. Cretan building-stones are sometimes engraved with letters of the Minoan script. Circuit-walls of towns and terrace-walls are often built of huge rough blocks (Cyclopean masonry).

Tombs.

Shafts and cists at all periods, and dug or built chamber-tombs at least since the Middle Bronze Age. The burial-rite is always inhumation. M. M. burials were made in large pottery jars and oval chests, L. M. in oblong chests and oval bath-tubs. The funeral furniture consists of pottery and metal vases, weapons and tools, toilet instruments and jewellery. Chamber-tombs are often revealed by ground sinking after their collapse, or by walls of their entrance-passages cropping out in hill-sides. Most characteristic and important are Mycenaean beehive-tombs with smooth corbelled vaults;

they appear after collapse as circles of masonry. Such tombs may contain rich treasure, and should be protected and reported without delay.

Pottery.

Crete.

Neolithic. Hand-made, thick, dark brown burnished ware, sometimes incised with simple rectilinear patterns. The latest is hardest fired, reddish, and undecorated.

Early Minoan. Hand-made, thin, plain or incised (*E. M. I*),

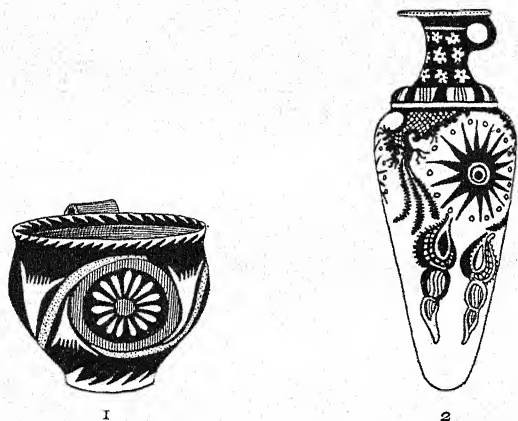


FIG. 16. Middle and Late Minoan Pottery

painted dark rectilinear patterns on light clay (*E. M. II*), or white rectilinear and spiral patterns on black-washed ground (*E. M. III*). The black wash is sometimes fired red in mottled patches (*Vasiliki ware*).

Middle Minoan. Wheel-made, thin, black-washed, painted with white, red, and yellow decoration increasing in elaboration of colour and design up to middle of *M. M. II* (*Kamàres ware*), thence tending towards simple spirals and naturalistic scrolls in white (Fig. 16, 1).

Late Minoan or *Mycenaean.* Elaborate spiral and naturalistic designs (plants and sea-creatures) in black alkaline glaze (fired brown and red) on lustrous yellow ground. *L. M. I*, full and realistic, with white and red touches (Fig. 16, 2); *L. M. II*, spaced and formal; *L. M. III*, sparse and conventional.

The commonest Mycenaean ware (*L. M. III*) is normally a fine fabric with scanty stylized ornament, thin spiral coils, corkscrew shells, long loops derived from cuttlefish, curved

and angular skeletons of lily and papyrus flowers (Fig. 17). Animal and human figures sometimes occur on large vases,



FIG. 17. Late

Mycenaean Vase

but only in this third period. Characteristic vase-shapes are goblets, tall and squat three-handled jars, and false-necked jars. Islands.

Neolithic. None known.

Early Cycladic. Hand-made, thick, dull brown, sometimes burnished red or black, plain or incised with very close linear patterns, particularly chevrons and spiral coils (Fig. 18, 1). Also lighter wares painted with linear patterns in thin black glaze or covered with black wash, like Helladic.

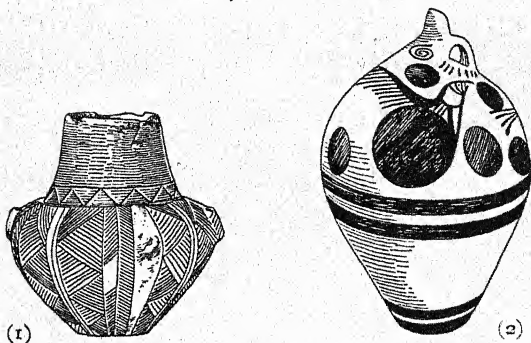


FIG. 18. Early and Middle Cycladic Ware

Middle Cycladic. Hand-made, of pale porous clay with curvilinear patterns in dull black glaze. *M. C. III*, black and red painting with naturalistic subjects, particularly large birds (Fig. 18, 2). Imported *M. M.* and *M. H.* wares.

Late Cycladic. At first free imitations of L. M. I pottery in dull red and black paint, but the local fabric gives way rapidly to ordinary Mycenaean ware.

South Greece.

Neolithic. Some painted wares like Thessalian at a few Peloponnesian sites and perhaps at Athens, but not yet generally recognized; also burnished grey or black ware with pellet ornament.

Early Helladic. Hand-made, thick, burnished and incised, like Cycladic. Then thin ware partially or wholly painted with red-black glaze (*Urfirnis*), and sometimes with rectilinear patterns in white on black, or in black on bare clay or polished white slip. Oval vase-shapes a peculiarity.

Middle Helladic. Black-glazed ware as before, plain and patterned, succeeded by hand-made ware with large dull black patterns on pale greenish clay (*Mattmalerei*), like Cycladic, and wheel-made burnished grey *bucchero* (*Minyan ware* (Fig. 19)). The painted ware appears also in a finer, slipped fabric and with curvilinear and polychrome decoration, red and black on white. Minoan pottery imported at end of period.

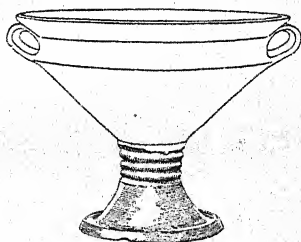
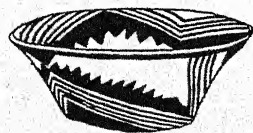


FIG 19. Minyan Goblet

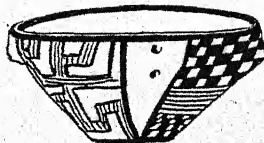
Late Helladic. Imported and local Minoan wares (*Mycenaean*), at first with Minyan, grey or yellow, and coarse dull-painted ware; but after the middle of the period only Mycenaean.

North Greece.

First (Neolithic) Period. Hand-made, thin burnished red ware sometimes painted with white lines, and fine white-slipped ware with linear (textile) patterns in bright red paint, teeth, chequers, zigzags (*Sésklo ware* (Fig. 20, 1)).



(1)



(2)

FIG. 20. Sésklo and Dimini Bowls

Second (Neolithic) Period. On eastern sites, heavy hand-made ware with hatched zigzag, chequer, and spiral patterns in black

on burnished clay or slip (*Dimini ware* (Fig. 20, 2)), later in red and white also (*Three-colour ware*). This pottery was derived from Central Europe and has been found as far south as Corinth. Elsewhere are monochrome and three-colour linear styles derived from the pottery of the first period. These are all succeeded on southern sites by E. H. III pottery.

Bronze Age. In the south, M. H. wares; in the centre and north, hand-made, plain or black-burnished or crudely painted (white and pink) or incised wares, related to Central European fabrics. Imported Mycenaean ware in the latest period.

Weapons and Implements.

Neolithic axes, hammers, and rubbers are made of polished stone, chisels and awls of bone, fine cutting-blades and points of black volcanic glass (obsidian) (Figs. 14, 15). This convenient substance, which was mainly derived from the island of Melos, was used even in the late Bronze Age, particularly for arrow-heads. Stone axes were also used in the early Bronze Age, and were then often bored for hafting. Copper (and silver) blades for spears and daggers are the earliest metal weapons; they are short and triangular, with rivets at base (Fig. 21, 1). Middle types, in bronze, are longer, flat or ribbed blades with short tangs (Fig. 21, 2). A Cycladic spear-head has a slit blade for binding to the shaft (Fig. 21, 3). Late Minoan and Mycenaean swords have hilts and horned guards in one piece with their blades, in the latest examples flanged all round and originally filled with wood or bone; spear-heads have long narrow blades and hammered sockets (Fig. 21, 4, 5). Arrow-heads are usually cut from thin sheet bronze. Other bronze implements are knives, razors, tweezers, and circular mirror-disks. Handles are often made of ivory.

Idols, Beads, Gems, Scripts.

Nude female figures in various designs and materials were used as idols. In Neolithic Crete and Thessaly a squatting steatopygous type was made in terra-cotta; Early Minoan figures are small and round, of steatite, alabaster, and coloured marbles; Early Cycladic idols are made of white marble in various schematic shapes, standing or sitting, sometimes large, but always flat and thin (Fig. 21, 6). Terra-cotta was used again in Late Minoan and Mycenaean times for small figures, sometimes flat with pointed shoulders, sometimes modelled in the round as busts on cylindrical bases.

Beads and jewels are made of gold, silver, bronze, crystal, and coloured stones, glass, and terra-cotta. Typical Mycenaean ornaments are embossed plaques in dark blue glass (*kyanos*). Engraved gems or seal-stones, usually circular (lenticular) or oval (glandular), bear free naturalistic designs from M. M. II to

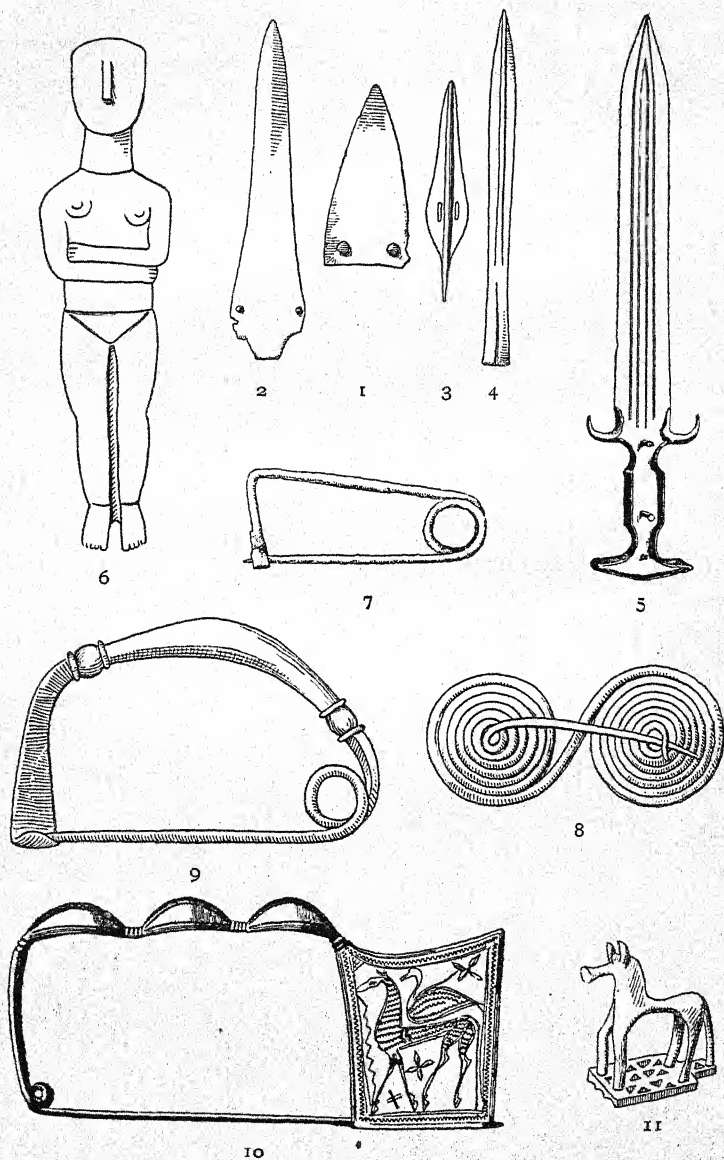


FIG. 21. TYPES OF PREHISTORIC GREEK IMPLEMENTS, ETC.

L. M. II. Late Mycenaean figures of men and women, animals, and plants are conventional, and Early Minoan devices are purely ornamental or pictographic. Middle and Late Minoan script is linear. It does not appear on gems, but is often engraved on articles of stone and soft clay or painted on terra-cotta. It has not been read.

II. HELLENIC

Some fundamental differences mark the transition from Pre-historic to Hellenic culture: the change of burial-rite from inhumation to cremation, the appearance of iron weapons and cutting implements instead of bronze, and of cloak-pins and brooches (*fibulae*) used in the new fashion of dress, the Greek alphabet and language, and a new style of art. There was, however, no immediate alteration of technical methods. Pottery is painted with black alkaline glaze, ornamental metalwork is hammered or chiselled, stone sculpture is rare. Ashlar masonry is general, but closely fitted polygonal work is characteristic of the archaic period. Baked brick was seldom used before the Roman age, but terra-cotta roof-tiles were common at all times and often bear inscriptions. The ordinary Greek tomb is a simple shaft, but Mycenaean chamber-tombs were sometimes re-used. The ashes of cremation burials are usually contained in ordinary domestic vessels of pottery or bronze, occasionally and at a late date in lead and marble urns. Funeral offerings generally consist of small pottery vases, terra-cotta statuettes, and jewellery, but articles of intrinsic value are uncommon.

Some material, such as coins and inscriptions recording historical events and persons, can be precisely placed, and in most other instances the style of art or form of letters gives a fairly accurate indication of date. The historical sequence may be conveniently divided into five periods.



FIG. 22. Geometric Amphora

1. Geometric (about 1000 B.C.-700 B.C.)

Style of art. Primitive and schematic, naturalistic subjects rare.

Pottery. Technique as Mycenaean but less brilliant; some Mycenaean shapes survive, some clumsy ones are new. Painted decoration of small geometric patterns, mostly hatched angular figures, zigzags, triangles, lozenges, meanders, animal and human silhouettes, in narrow continuous bands, sometimes in panels on black-glazed ground (Fig. 22). There

were several local styles, Attic, Argive, Island, Ionic, but they are not sharply differentiated. Attic is the most elaborate.

Fibulae and pins. Ordinarily of bronze. Large pin-heads of single or multiple balls and disks. *Fibulae* of many types, from the original (Sub-Mycenaean or Proto-Geometric) flat safety-pins through stilted, arched, looped, twisted, and beaded bows to boat-shaped brooches with large engraved catchplates (Fig. 21, 7-10).

Inscriptions. Very rare, on late pottery.

Coins. None.

Sculpture. Small bronze animals and birds mounted on flat openwork plates like seals (Fig. 21, 11). Rough bronze and terra-cotta statuettes.

2. Archaic (700 B.C.-500 B.C.).

Style of art. Formal and decorative, many human and animal subjects and rich Oriental ornament.



1 FIG. 23. Protocorinthian and Laconian Ware

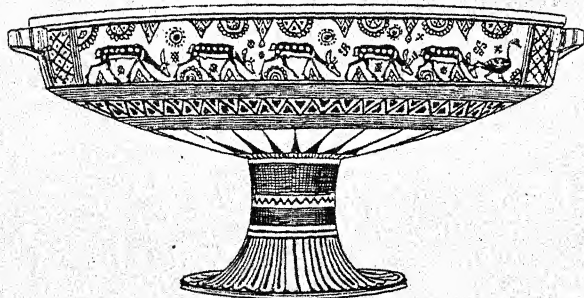


FIG. 24. Rhodian Kylix

Pottery. In the seventh century, many Orientalizing fabrics, Protocorinthian (Fig. 23, 1), Laconian (Fig. 23, 2), Attic, Cretan,

Melian, Rhodian (Fig. 24). All have bands of real or monstrous animals, palmette and lotus, with more or less survival of Geometric motives, painted with dull red and white in addition to the black glaze. Protocorinthian is made of smooth pale yellow clay in miniature shapes, pointed oval scent-bottles and conical cups, and finely decorated. Attic is a rougher fabric in red-brown clay; Laconian, Melian, and Rhodian are painted over a white slip. The backgrounds of the animal-friezes are closely filled

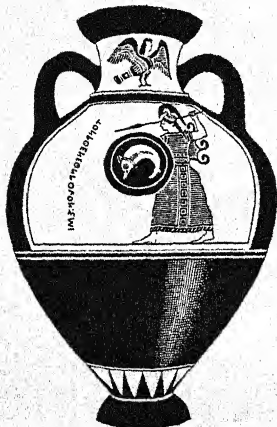


FIG. 25. Attic Black-figure Amphora



FIG. 26. Corinthian Ware

with small ornaments. In the sixth century the human subjects were enlarged, the backgrounds cleared, and technique perfected in the *Black-figure style*, which became an Attic monopoly. In this the drawing is in black-glaze silhouette on red clay ground, details engraved and painted in white and red (Fig. 25). Other early black-figure fabrics are Corinthian, Chalcidian, and Ionian. The common Corinthian vases are small globular and oval bottles, jars, and jugs, bearing human and animal figures in a field of irregular patch-rosettes (Fig. 26). The red-figure style began about 525.

Fibulae. Some late Geometric types survived in the seventh century.

Inscriptions. Dedications frequently engraved on pottery and small bronzes, names painted in decoration and signatures of vases; public documents and epitaphs begin.

Coins. Begin in seventh century, electrum in Ionia, silver in Greece.

Sculpture. Statuettes of deities, votaries, and animals in bronze, stone, and terra-cotta. Monumental statuary begins.

BEFORE 400 B.C.	400-30 B.C.	30 B.C. - 400 A.D.	AFTER 400 A.D.
ΑΑΑΑΑΑΑΑ ΑΑΑΑΑΑ<	ΑΑΑΑΑΑΑΑ	ΑΑΑΑΑΑΔ ΑΑΑΑΔ	ΑΑΑΑΑΔ ΑΔΔΔ
ΒΒΓΓΕΓΜΥΛ<Λ	Β	ΒΒΒΒΒ	ΒΒΒ
ΓΓΛΛ<Λ	ΓΓ	ΓΓΓ	Γ
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ΕΕΕΕΕΕΕΕΕΕ ΕΕΒΒΖ	ΕΕΕΕΕΕ	ΕΕΕΕΕΕΕ ΕΕΕΕΕΕ	Ε
ΦΦΦΦ<Λ			
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ΝΝΝΝΝΝΝ	ΝΙΙΝΝ	ΝΛΝΝΝ	ΝΝΝΝ
ΞΞΞ Ξ+Χ	ΞΞΞΞΞ	ΞΞΞΞΞΞΞΞΞ ΞΞΞΞΞΞΞΞ	ΞΞΞΞΞ
ΟΟΟΟΟ<Λ	Ο<Λ	Ο<Λ<Λ	ΟΟ
ΠΠΠ	ΠΠΠΠΠΠΠΠΠ	ΠΠΠΠΠΠΠΠ	ΠΠ
ΡΡΡΡΡ			
ΡΡΡΡΡΡΡ	ΡΡΡΡ	ΡΡΡΡΡΡΡ	ΡΡ
ΣΣΣΣΣΞΣΖ	ΣΣΣΣΣΣΣ	ΣΣΣΣΣΣΣ ΣΣΣΣΣΣ	ΣΣ
Τ	ΤΤΤ	ΤΤΤΤ	ΤΤ
ΥΥΥΥΥ	ΥΥΥΥ	ΥΥΥΥΥ	ΥΥΥ
ΦΦΦΦ	ΦΦ+ΦΦΦ	ΦΦΦΦΦΦΦΦ	ΦΦ
ΧΧΧΧΧΥΧ	ΧΧΧ	ΧΥΧΧΧΧ	ΧΧΧ
ΨΥΥ	ΨΥΥΥ	ΥΥΥΥΥ	ΥΥ
ΩΩΩΩ	ΩΩΩ	ΩΩΩΩΩΩΩΩΩ	ΩΩΩΩΩ

FIG. 27. ALPHABETS OF GREECE AND THE ISLANDS

3. Classical (500 B.C.-300 B.C.).

Style of art. Progress from archaic severity to complete freedom, but always restrained. Predominance of human figures.

Pottery. In the fifth century, a monopoly of Attic red-figure



FIG. 28. Attic Red-figure Cantharos

ware and scanty survivals of black-figure. In the *Red-figure* style backgrounds are covered with black glaze, the figures left in silhouette on the red clay and finished with fine inner drawing (Fig. 28). A class of funeral oil-bottles is painted in bright



FIG. 29. Moulded and White-painted Ware

colours on white slip. In the fourth century there are some late red-figure wares with details in white and other colours, and black-glazed wares with moulded ornament, ribbed, fluted, or figured, or with painted patterns in white and gold (Fig. 29).

Coins. Greek gold begins in the late fifth century (Athens), bronze in the fourth. Macedonian regal issues of Philip and Alexander at the end of the fourth century begin to displace city-coinages.

Sculpture. In addition to the monumental work, continuing and developing the old traditions, light and fanciful subjects are numerous in fourth-century work, boys and girls in ordinary dress and action, as in the terra-cotta statuettes of Tanagra, nude goddesses, winged Victories, and Love-gods. Marble tombstones bear reliefs of domestic scenes.

4. Hellenistic (300 B.C.—100 B.C.).

Style of art. Free, fanciful, and sometimes extravagant. Development of naturalistic subjects and ornament.



FIG. 30. Hellenistic Moulded Pottery

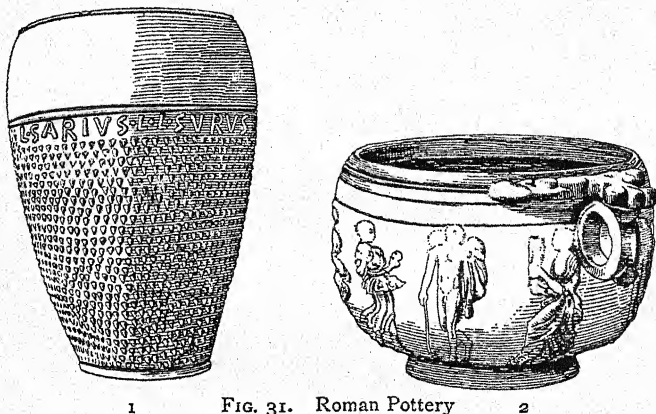
Pottery. Mostly black-glazed, with moulded decoration imitated from embossed metal vases (Fig. 30); some painted foliate designs.

Coins. Beginning of portraiture in coins of Macedonian dynasts; predominance of regal and federal coinages.

5. Roman (100 B.C.—A.D. 323).

Styles of art. At first elegant and eclectic; then conventional and weak; later decorative and vigorous.

Pottery. Bright red with moulded ornament or plain (*Terra sigillata*) (Fig. 31, 1). Gaulish fabrics imported after A.D. 50,



1

FIG. 31. Roman Pottery

2

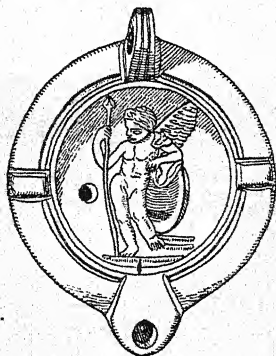


FIG. 32.

Roman Lamp

before then Greek or Asiatic (perhaps Pliny's *Samian ware*) and Italian (*Arretine ware*). Plain and decorated pieces bear potters' names, which with vase-shapes and types of ornament are classified in chronological series. Beside these are scanty lead-glazed wares, brown, yellow, green, which became common in the Byzantine period (Fig. 31, 2). Lamps with reliefs in a central medallion (Fig. 32).

Coins. Final suppression of autonomous issues in gold and silver after establishment of Roman Empire in 27 B.C., and universal currency of Roman money. A few bronze issues of some important cities.

CHAPTER III

ASIA MINOR

[See the diagrams of pottery, p. 61 ; inscriptions, p. 63.]

1. Introductory.

Travellers are more likely to make new discoveries elsewhere than on the actual sites of ancient towns and villages. In many cases the site is found to be entirely bare of all remains except sometimes small fragments of pottery. In general, inscribed and other stones have been carried away to serve as building material for mosques, houses, fountains, bridges, &c., or as headstones for graves in cemeteries, or for other utilitarian purposes. It is, therefore, in and near modern villages and towns that inscriptions are chiefly to be found, as well as smaller antiquities, such as clay tablets, pots or fragments of them, terra-cotta figures, coins, and so forth. The smaller articles may sometimes be found in the bazaars, but they are usually in the hands of individuals.

It should not be assumed that inscriptions which are exposed to public view have all been copied ; moreover, new stones are constantly being turned up, especially where building is going on and where there are old sites or cemeteries close at hand.¹ Great numbers of inscribed stones are hidden away in private dwellings, where they are difficult of discovery and of access. Travellers should take advantage of opportunities that may offer of examining antiquities in private houses, and of visiting sites or monuments about which information may be received, particularly if they are a little off the beaten track. Reward will often come in the shape of valuable discoveries, of which many remain to be made. Cilicia in particular has been imperfectly explored, and interesting monuments and inscriptions, particularly Hittite, may be found there.

2. Pottery Fabrics.

It is not yet possible to describe fully or accurately the succession of styles, or even to assign all known fabrics to their proper periods. For this reason, even the most fragmentary specimens are of interest, provided only that :

- (1) the outer surface is fairly well preserved,
- (2) the place of discovery is known.

¹ When building is actually going on, it is sometimes possible for a traveller to persuade the mason to insert inscribed or carved stones whole, and face outwards, and so conserve them, instead of breaking up.

All fragments showing a rim or spout, handles or part of a base, should be preserved until they can be compared with a more perfect specimen.

The following fabrics, however, are widely distributed, and usually seem to have flourished in the order in which they are here described :

A. Hand-made wares, rough within, but smooth or burnished surface, self-coloured (drab or brown), or intentionally coloured black (by charred matter in the clay, or by a smoky fire), or red (by a clear fire, sometimes aided by a wash or 'slip' of more ferruginous clay). Sometimes a black ware is 'overfired' to an ashy grey.

In such wares ornament is rare, and consists mainly of (a) incised dots, dashes, or lines, in simple rectilinear patterns (chevrons, zigzags, lozenges), often enhanced by a white chalky filling (Fig. 33, 5-8); (b) ridges or bosses modelled in the clay surface, or adhering to it. The forms are plump and globular, often round-bottomed or standing on short feet. Rims are absent or ill-developed; necks often prolonged into trough-spouts or long beaks; handles are very simple and short. Vases are sometimes modelled like animals, or have human faces or breasts (Fig. 33, 1-4).

These wares begin in the Stone Age, and seem to predominate in the early and middle Bronze Age. Locally they may have lasted even later, but the use of the potter's wheel spread rapidly in the early Bronze Age.

B. Hand-made wares of light-coloured clay, with painted decoration, usually in black or reddish-brown. The paint is generally without glaze, and sometimes is decayed and easily washes off.

The forms and ornaments resemble those of class A, but are less rude and more varied. Distinct rims and standing-bases appear, and spouts give place to a pinched lip.

C. Hand-made wares of black or other dark clay, with painted decoration in white or ochre. These fabrics are rather rare, and the paint is easily washed off. The forms follow those of class B.

Classes B and C seem to begin early in the Bronze Age, and are gradually replaced by the corresponding wheel-made fabrics of class D.

D. Wheel-made pottery begins in the Bronze Age, and is distinguished by its symmetrical forms, and by the texture of the inner surface, especially about the rim and base, where the potter's fingers have grazed the whirling clay. Self-coloured wares still occur, and are sometimes elegant ('bucchero' ware); but the improved furnaces now permit general use of light-coloured clays, suited to painted decoration. Glazed paint is still rare, and may be taken as probable token of date not

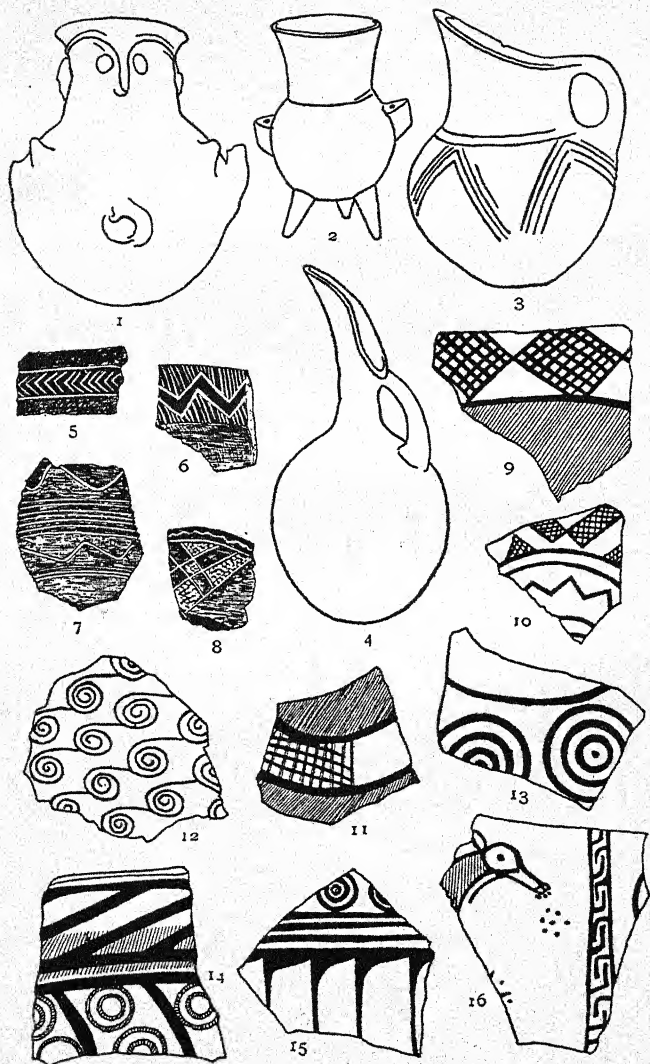


FIG. 33. ASIA MINOR POTTERY

earlier than the end of the Bronze Age. The glaze-painted wares of the Greek island-world occasionally wandered to the mainland a little earlier than this, but not far from the coast. On wheel-made pottery the ornament is either (*a*) applied while the pot is on the wheel, and consequently limited to lines and bands following the plane of rotation, or (*b*) added afterwards, free-hand, usually between such bands, and especially on the neck and shoulder.

Simple rectilinear schemes are commonest (panels, lozenges, and triangles, enriched with lattice and chequers) (Fig. 33, 9, 10, 11, 12); with these in the Early Iron Age appear little targets of concentric circles drawn mechanically with compasses (Fig. 33, 13-15); also, by degrees, birds (Fig. 33, 16), animals, and simple plant designs (rosettes, lotus, palmette), and occasionally human figures. But, as a rule, the mainland pottery is very simply decorated, and insular imports are rare, except within the area of Greek colonization.

In the Later Iron Age or Historic Period, from the seventh century onward, the pot-fabrics of Asia Minor rapidly assimilate two main classes of foreign fashions, Greek and Oriental.

E. The Oriental types (mainly from Syria) are all plump and heavy looking, usually in coarse buff or cream-coloured ware, almost without paint. The Greek forms are more graceful, varied, and specialized; light-coloured clays predominate, with simple bands of black ill-glazed paint, absorbed by the inferior clays.

After Alexander's time the Greek and the Oriental forms became confused; the general level of style and execution falls, painted decoration almost disappears, and the outer surface is often ribbed by uneven pressure of the fingers on the whirling clay. This fashion is a sign of late Hellenistic or Graeco-Roman date.

F. Meanwhile, the black-glazed Greek (mainly Athenian) wares spread widely for table use, and were imitated locally from the fourth century onwards. The clay is pale or reddish (genuine Greek fabrics are usually quite red within) and the glaze thick, black, and of a brilliant glassy smoothness. Imitations are of all degrees of inferiority.

G. Other late fabrics have smooth ill-glazed surfaces, of various red, brown, or chocolate tints, over hard-baked dull-fractured paste not unlike modern earthenware, but usually dark-coloured. These wares begin in the Hellenistic period, and go on into the Roman and early Byzantine Ages. They have sometimes a little ornament in a hard white or cream 'slip' which stands up above the surface of the vase. These fabrics are all for table use, or for tomb-furniture, and are usually of small size.

H. Pottery with vitreous glaze like modern earthenware only

appears on Byzantine and Turkish sites. There are a few late Greek and Roman fabrics of glazed ware, mostly of dark brown and olive-green tints; but they are rare, and usually found in tombs. The earlier glazes are applied directly to the clay; later a white or coloured slip is applied first, and a clear siliceous glaze over this.

3. Inscriptions and Monuments.

A. *Hittite Civilization.* (See figures, p. 65.)

(1) Tablets of baked clay (from 2000 B.C. onwards) with cuneiform (or wedge-shaped) writing (Fig. 35, 1) are found anywhere in Eastern Asia Minor, within the Halys bend and south of it, in Southern Cappadocia, in Cilicia, and in North Syria up to the Euphrates.

(2) Inscriptions (1000 and 700 B.C. probably) generally cut on stone, dark and hard (black basalt), or on the living rock, in hieroglyphic writing. The hieroglyphs are either cut in relief (Fig. 35, 4) or incised (Fig. 35, 2). Found in the same region and sporadically west of the Halys.

(3) Monuments and sculpture (two main styles, probably 1400 B.C. and 900 B.C. onwards). Human figures are short and thick, generally wearing boots with toes turned up (Fig. 35, 3). Found in the same regions as the inscriptions and also west of the Halys to the sea.

B. *Lydian inscriptions.*

From about 500 B.C. Letters mostly like Greek capitals, but sometimes reversed; (see p. 63, at bottom).

C. *Lycian inscriptions and monuments.*

Inscriptions (from about 500 B.C.), sometimes with a Greek translation. (See p. 63, at bottom.)

Monuments, mostly with inscriptions, are generally tombs in stone, built to imitate wood, with beams projecting or showing.

D. *Greek antiquities.*

(1) *Early period* to 323 B.C.: the great Greek colonies on the seaboard and in the coast valleys really formed an outlying part of Greece, and for them the section on Greece should be consulted.

(2) *Periods of Seleucid and Pergamene rule, 323-130 B.C.*

Inscriptions of these periods to be found mostly in the coastal region, rarely on the plateau. Chiefly royal ordinances, thank-offerings, municipal honorary inscriptions, decrees, covenants, and the like.

(3) *Graeco-Roman period, 130 B.C.-A.D. 400.*

Language of inscriptions remains normally Greek, though the lettering gradually assumes a different character from century to

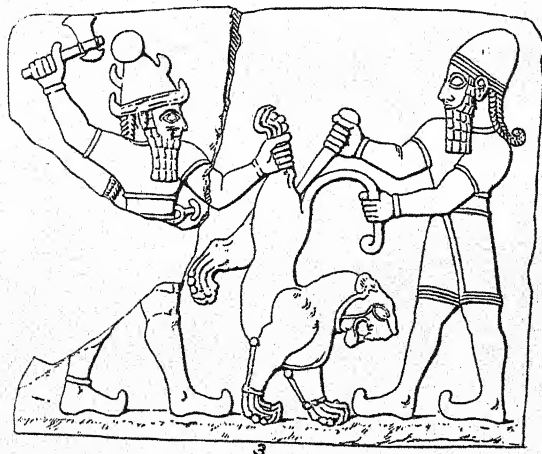


FIG. 35. HITTITE INSCRIPTIONS, ETC.

century, steadily deteriorating. The Phrygian language, written in Greek letters, survives for several centuries in epitaphs, part of the inscription often being in Greek (see p. 63, bottom).

Latin inscriptions are not common except in Roman colonies during the earlier centuries of their existence. Elsewhere they are chiefly official documents of various kinds (e.g. imperial ordinances, milestones usually of columnar shape with the Emperor's titles, boundary stones, &c.), or expressions of homage to Emperors, honorary inscriptions to governors and other officials, dedications, epitaphs, &c. Sometimes a Greek version is added.

Latin inscriptions of the Republican period (recording decrees of the Senate) are extremely rare.

CHAPTER IV

CYPRUS

[The traveller will find the *Catalogue of the Cyprus Museum*, by J. L. Myres and M. Ohnefalsch-Richter (Oxford, 1899) indispensable for the study of Cypriote Antiquities. Reference may also be made to Myres, *Catalogue of the Cesnola Collection of Antiquities from Cyprus* (New York, 1914), and (for the Bronze Age only) E. Gjerstad, *Studies on Prehistoric Cyprus*, Uppsala, 1926. They contain numerous illustrations of types, and make diagrams for the present section unnecessary.]

The principal classes of ancient remains are as follows :

Settlements. These are usually much devastated by the removal of building materials to more recent habitations ; or are obscured by modern towns and villages on the same site. All foundations in squared masonry, or composed of unusually large stones, should be noted and protected as far as possible. The frequent presence of large building stones, and especially of architectural fragments, in recent house-walls probably indicates the neighbourhood of an ancient building ; and all reconstructions and fresh foundation-trenches should be kept under observation. The present Antiquity Law provides for the inspection and custody of ancient remains so exposed : the Curator of Ancient Monuments is charged with the supervision of all buildings and monuments above ground ; the Keeper of Antiquities for the custody of movable objects, and for the registration of those already in private possession. Taking into consideration the utility of good building material to the present owners of such sites, active co-operation to preserve ancient masonry is not to be expected, unless local patriotism and expectation of traffic from tourists can be enlisted in support of Government regulations. Architectural fragments found in reconstruction are often best preserved by arranging that they shall be built conspicuously into one of the new walls, well above ground-level, or transferred to the nearest church or school-house.

Sanctuaries usually consist of a walled enclosure containing numerous pedestals and bases of votive statues and other monuments. Usually only the foundation-walls are of stone, as the same sun-dried brick was commonly used in ancient as in modern times for the superstructure. Such sites are often very shallow, and when they occur in the open country are liable to be disturbed by ploughing, when the smaller statuettes and terra-cotta figures may be turned up in considerable num-

bers. As most of our knowledge of the sculpture, as well as of the religious observances, of ancient Cyprus is derived from such sites, all such indications should be reported at once to the Keeper of Antiquities, and arrangements made for the site to be examined with a view to excavation before it is cultivated further. The sculpture on these sites begins usually in the seventh century B.C.; before that period terra-cotta figures were in use as far back as the ninth or tenth century. Figures of 'Mixed Oriental' style, resembling Assyrian or Egyptian work, give place about 500 B.C. to a provincial Greek style, which passes gradually into Hellenistic and Graeco-Roman. The material is almost invariably the soft local limestone, and the workmanship is often clumsy; but even the coarser examples should be treated carefully, as they were sometimes completed in colours which are easily destroyed by too vigorous washing. The first cleaning should be with gently running water only.

Tombs are of all periods, and are found not only around historical sites and actual ruins, but also in localities where the settlement to which they belonged has wholly disappeared. Though simple graves were always in use among the poorest folk, the commonest form of tomb at all periods is a rock-cut chamber entered by a door in one side, to which access is given by a shaft or sloping passage (*dromos*) cut likewise in the rock. The earliest are but a few feet from the surface, just deep enough to ensure a firm roof to the chamber; later the depth is as much as 12 or 15 feet. Occasionally the chamber, and even the passage, is built of masonry and roofed with stone slabs or a corbel vault, and the simple door-slab gives place to a stone door, hinged, or sliding in a grooved frame. Cremation was occasionally practised in the Hellenistic Age, but the regular custom was to bury the body, during the Bronze Age in a sitting or a contracted posture, in all later periods lying at full length. Stone coffins (*sarcophagi*), with a lid, were used occasionally by the rich from the sixth century onwards, and wooden coffins in the Graeco-Roman period. There is always as rich a tomb-equipment as the mourners could afford, of personal ornaments, wreaths, provisions, weapons, and other gear, especially pottery; and terra-cotta figures of men, animals, furniture, and other objects for the use of the deceased. In Graeco-Roman tombs pottery is supplemented or replaced by glass vessels, and coins are frequent, and are important evidence of date. Most of our knowledge of Cypriote arts and industries comes from this tomb-equipment, which should therefore if possible be preserved entire and kept together, tomb by tomb; not neglecting the skeletons themselves, which are of value to indicate changes in the island population. The position of tombs was often marked by gravestones above ground; these remain scattered in the

surface soil, or collected to block the entrances to later tombs. They are frequently inscribed. A very common form in Graeco-Roman times is the *cippus*, a short column, like an altar.

Pottery and other objects from tombs, and also from settlements, is classified as follows:

Stone Age: not clearly represented in Cyprus; but some of the earliest tombs (with rude varieties of red hand-made ware) contain no metallic objects, and may belong to the latest neolithic period. Stone implements are very rare, and should be carefully recorded, with a note of the spot where they were found. Flint flakes may be ancient, but may also have been shed from modern threshing-boards.

Bronze Age, early period (before 2000 B. C.): polished red ware, hand-made, sometimes with incised ornament filled with white: clean therefore gently!

Bronze Age, middle period (2000-1500 B. C.): polished red ware, and also white hand-made ware with painted linear ornament in dull black or brown.

Bronze Age, late period (1500-1200 B. C.): degenerate polished red and painted white wares; wheel-made white ware with painted ornament in glazed black or brown, of the 'Late Minoan' or 'Mycenaean' style introduced from the Aegean; various hand-made wares of foreign styles, probably from Syria or Asia Minor.

In these periods, weapons, implements, and ornaments are of copper (with bronze in the 'late' period); gold occurs rarely; terra-cotta figures are few and rude; engraved seals are cylindrical, like those of Babylonia.

Early Iron Age: wheel-made pottery, either white or bright red, with painted geometrical ornament in black (supplemented on the white ware with purple-red); there is also a black fabric imitating metallic forms.

The early period (1200-1000 B. C.) marks the transition from bronze to iron implements, with survival of Mycenaean decoration on the pottery, and replacement of cylindrical by conical seals.

The middle period (1000-750 B. C.) has purely geometrical decoration: terra-cotta figures are modelled rudely by hand, and painted like the pottery.

The late period (750-500 B. C.) shows foreign influences from Greece and from Phoenicia or Egypt, competing with and enriching the native geometrical style. Scarab seals, blue-glaze beads and other personal ornaments, and silver objects, appear. Terra-cotta figures stamped in a mould occur side by side with modelled.

Hellenic Age, with increasing influence of Greek arts and industries.

Early or Hellenic period (500-300 B. C.): the native pottery

degenerates and Greek vases and terra-cottas are imported and imitated; jewellery of gold and silver is fairly common and of good quality; with engraved seals set in signet rings: the bronze mirrors are circular, with a handle-spike.

Middle or Hellenistic period (300-50 B. C.): the native pottery is almost wholly replaced by imitations of forms from other parts of the Greek world, especially from Syria and Asia Minor: large handled wine-jars (*amphorae*) are common: terra-cottas and jewellery also follow Greek styles: coloured stones are set in rings and ear-rings.

Late or Graeco-Roman period (50 B. C.-A. D. 400): pottery is partly replaced by vessels of blown glass: clay lamps, red-glazed jugs, so-called 'tear-bottles' of spindle-shapes, ear-rings of beads strung on wire, bronze rings and bracelets, circular mirrors without handles, and bronze coins are characteristics.

Byzantine Age (after A. D. 400): Christian burial in surface graves supersedes the use of rock-hewn tombs: funerary equipment goes out of use, except a few personal ornaments, which are of mean appearance, and may bear Christian symbols. Domestic pottery is coarse, ungraceful, and frequently ribbed on the outside. Clay lamps have long nozzles, and Christian symbols. Glass becomes clumsy and less common; and glazed bowls and cups come into use. Occasional rich finds of silver plate (salvers, cups, spoons, &c.) and personal ornaments have been made among Byzantine ruins.

On medieval and later sites, various glazed fabrics of pottery are found, and occasionally examples of the glazed and painted jugs, plates, and tiles known to collectors as 'Rhodian' or 'Damascus' ware.

Inscriptions occur on settlement-sites, in sanctuaries and associated with tombs: usually cut on slabs or blocks of soft limestone, though marble and other harder stones were used in Hellenistic and Roman times. Besides the ordinary Greek (see pp. 55, 63) and Roman alphabets the Phoenician alphabet (see pp. 80-1) was in use at Kition (Larnaca), in the great sanctuaries at Idalion (Dali), and occasionally elsewhere; and from early times until the fourth century a syllabary peculiar to Cyprus, often very rudely hewn, in irregular lines, on ill-shaped blocks. Such 'Cypriote inscriptions' (see accompanying illustration p. 71) are of great value and interest, and have been often overlooked among building material drawn from old sites. In all doubtful cases, a 'squeeze' should be made by one of the methods described in the first part of this volume and submitted to the Keeper of Antiquities. The stamped inscriptions on the handles of wine-jars are worth preserving, as evidence for the course of trade. They are common around all classical sites, especially seaports.

Coins were issued in Cyprus from the sixth century onward;

first in silver, later (in the fourth century B. C.) occasionally in gold, and from the fourth century commonly in copper. A Ptolemaic coinage succeeded in the third century that of the

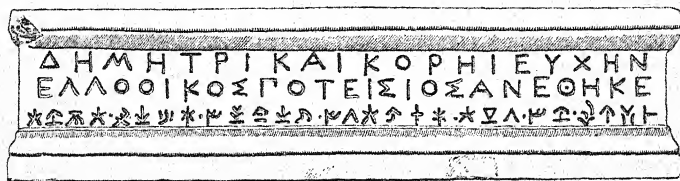


FIG. 36. Bilingual (Greek and Cypriote) Dedication to Demeter and Persephone from Curium

local rulers; the Roman coinage, with inscriptions sometimes in Greek, sometimes in Latin, lasts from Augustus to the beginning of the third century. Coins of the Byzantine Emperors and of the Lusignan Kings are common, of rough workmanship overloaded with lettering.

CHAPTER V

CENTRAL AND NORTH SYRIA

[See the diagrams of stone implements, pp. 38-43; of pottery and weapons, &c., pp. 75, 77; of alphabets, pp. 65, 80 f.]

The following notes are to be accepted as only a rough and imperfect guide, since no part of Syria, north of Palestine, has been widely or minutely explored, and the archaeology of the earliest period, in Central Syria, for example, is almost unknown.

The periods into which the archaeological history of Syria should be divided are roughly as follows:

- I. Neolithic and Chalcolithic Age, to about 2000 B. C.
- II. Bronze Age or Early Hittite, to about 1100 B. C.
- III. Iron Age or Late Hittite, to about 550 B. C.
- IV. Persian Period, to about 330 B. C.
- V. Hellenistic Period, to about 100 B. C.
- VI. Roman Period.
- VII. Byzantine Period.

I. Neolithic.

No purely Neolithic sites yet known, but lowest strata of remains at Šakdjegözü and Sindjirli, on the Carchemish citadel, and in certain kilns at Khan Yunus near by, and also pot-burials among house remains are of this Age. (But see Chapter VIII, Mesopotamia, whose Neolithic period is similar.)

Stone implements: as in Greece, including obsidian of very clear texture, probably of inner Asiatic, not Aegean production. Bone needles and other implements.

Pottery. Four varieties have been observed: (1) buff ground with simple linear decoration applied direct on the gritty body-clay in lustreless pigments, black, chocolate-brown, or red, according to the firing; (2) greenish-buff face, hand-polished, with polychrome varnish decoration of vandykes and other geometric motives; (3) monochrome, black to grey, not burnished, but sometimes decorated with incised linear patterns; (4) plain red or buff (e.g. large urns in which Neolithic burials were found on the Carchemish citadel). All pottery hand-made.

Figurines: rude clay and stone figurines are likely to occur, but have as yet been found very rarely in Neolithic strata.

Copper implements: traces observed at Carchemish: to be looked for.

II. Bronze Age.

(a) *Early period* to about 1400 B. C. Cist-graves made of rough stone slabs, near crude brick houses. Conjunction of such slabs with bricks would be an indication of an early Bronze Age site. Rare pot-burials survive.

Implements. Spear-heads (resembling early Sumerian types; see p. 77) of long tapering form rounded sharply at the base, which has long tang (Fig. 38, 5): poker-like butts (Fig. 38, 2): knives with curved tangs: 'toggle' pins: all bronze (but a silver toggle-pin has been found) (Fig. 38, 1, 8).

Pottery. All wheel-made but rough: light red or buff faced of reddish clay: decoration rare and only in simple zigzags or waves in reddish-brown pigment: long-stemmed vases of 'champagne-glass' form are common (Fig. 37, 4): rarely a creamy slip is applied to the red clay.

(b) *Later period (Early Hittite)*, c. 1400-1100 B. C.; marked by the Hittite invasion from Anatolia and conquest of North Syria in 14th cent. B. C. Cist-graves apart from houses, in cemeteries.

Implements. Long narrow celts often riveted: spear-heads, leaf-shaped or triangular (Fig. 38, 3, 6, 10): axe-heads with socket, swelling blade and curved cutting-edge: pins both 'toggle' and unpierced, straight and bent over.

Pottery. Wheel-made, well potted, and commonly *ring-burnished*, the process beginning at the base of a vase and climbing spirally: little painted decoration: face usually dusky brown over pinkish body clay, but red and yellow-white faced wares also found: shapes, mostly bowls, open and half closed: ring feet, but no handles to vases: only occasionally lug-ears (Fig. 37, 1, 2, 3, 5, 6). Rims well turned over belong to the latest period, in which elaborate ring-burnishing is common.

Beads, &c. Diamond-shaped, with incised decoration, in clay or stone, common. **Pendants, &c.**, of shell, lapis lazuli, cornelian, crystal. **Cylinders**, of rude design imitating Babylonian in stone and bone. **Spindle-whorls** in steatite and clay.

III. Iron Age (Syro-Hittite).

To this belong the Hittite remains in Syria, such as the splendid stone reliefs of Carchemish (8th cent.) inspired by Assyrian art; and the Aramaean sculptures of Sindjirli and Sakdjegözü with the same origin. These consist of slabs with sculpture in high relief that formed the lining of halls and corridors. Occasionally figures in the round are also found. Graves are unlined pits, with urn burials, the corpse having been cremated. Cylinders, &c., showing traces of fire, will belong to this Age.

Implements and weapons. Arrow-heads of bronze: spear-heads of bronze and iron: axes, knives, and picks of iron (miniature models occur in graves): daggers of iron. *Fibulae*, of bronze, semicircular and triangular (as in Asia Minor) (Fig. 38, 4, 9, 11): plain armlets of bronze: pins, spatulae, &c., of bronze: thin appliqué ornaments. Bronze bowls (gilt) with gadroon or lotus ornament (moulded) in later period. Steatite censers, in form of a cup held by a human hand, are not uncommon (Fig. 38, 7).

Pottery. Tall narrow-mouthed urns, bath-shaped vessels, and bell-kraters common (Fig. 37, 10): trefoil-mouth *oenochorae* and *hydriae*; also *amphorae* (Fig. 37, 7).

In earlier period, white or drab slipped surface with geometric patterns (rarely rude birds) in black. In later period, pinkish glaze with geometric patterns in black-brown, concentric circles being a common motive. Tripod bowls in unslipped 'kitchen' ware (Fig. 37, 8). Blue or greenish glazed alabastra, with white, brown, or yellow bands, occur (as in Rhodes).

Figurines. Drab clay, painted with red or black bands and details. Two types: (a) Horsemen; (b) Goddesses of columnar shape, often with flower headdresses, and sometimes carrying a child.

Seals, &c. Scarabs with designs of Egyptian appearance: cylinders, steatite or (more commonly) glazed paste, lightly and often scratchily engraved: hard stone seals finely engraved: flattened spheroids in steatite with Hittite symbols on both faces, inscriptions being often garbled.

Inscriptions. Most of those in Hittite script, both relieved and incised, found in Syria, are of this Age, but chiefly of the earlier part of it (cf. p. 65). Those in Semitic characters begin in this Age; and to its latter part (8th-7th cents.) belong important Aramaic inscriptions, e.g. the Bar-Rekub monuments of Sindjirli (Samal). See tables of letter-forms appended to Palestine section, p. 80-1.

IV. Persian Period.

Imported Egyptian and Egypto-Phoenician objects (bronze bowls as in Age III: scarabs: figure-amulets), Rhodian (pottery), Attic (coins, small black-figure vases, &c.).

Weapons and implements. Iron. Long swords: spear-heads, socketed, often with square or diamond mid-rib: short double-edged daggers with round pommels: chapes (bronze) with moulded or beaten relief-work: knives, small and slightly curved: arrow-heads (usually bronze and triangular): horse-bits (usually bronze) with heavy knobbed side-bars: ear-rings, wire armlets and pins (generally plain) of bronze: *fibulae* as in



FIG. 37. SYRIAN POTTERY

Age III : circular mirrors, plain, of bronze : anklets of heavy bronze : kohl-pots, bronze, of hollow cylindrical form, with plain sticks.

Pottery. As in Age II, plain, polished, rarely ring-burnished, but of less careful workmanship (Fig. 37, 9). Glazed alabastra, 'pilgrim-bottles', aryballi, &c. (as in Age III), common. White-yellow slipped ware with bands of black survives rarely from Age III.

Stone vessels. Bowls on inverted cup-shaped feet not uncommon (Fig. 37, 11).

Beads and Seals. Eye-beads in mosaic glass, and other glass beads (hard stone and bronze more rarely) : conoid seals in hard crystalline stones, usually engraved with figure praying to the Moon-god : also soft stone, glass and paste conoids. Scarabs and scaraboids in paste. Cylinders become scarce.

V. Hellenistic. VI. Roman. VII. Byzantine.

Most of the characteristic Syrian products of all these periods do not differ materially from those found in other East Mediterranean lands, e.g. Greece and Asia Minor. The change to Persian (Sassanian) types comes in the late seventh century A.D.

Two classes of objects, examples of the first of which are mostly of Age III, but may be Persian, Hellenistic, or even Roman, are very commonly met with in Syria :

1. **Figurines**, single or in pairs or threes, of bronze or terra-cotta, representing cult-types. Most common is a standing god with peaked cap, short tunic, and arm raised in act of smiting : a seated goddess also common : figures of animals, especially a bull ; and phallic objects (these mainly Roman).

2. **Glass plain** (iridescent from decay), ribbed, or moulded, in great variety of forms—bowls, jugs, cups, &c. Mostly late Hellenistic, Roman, and Byzantine, and especially common and of fine quality in the Orontes valley.

Parti-coloured glass (with white or yellow bands and threads) is earlier (Persian period). Painted and enamelled glass with gilt or polychrome designs is later (ninth to fifteenth century, Arab).

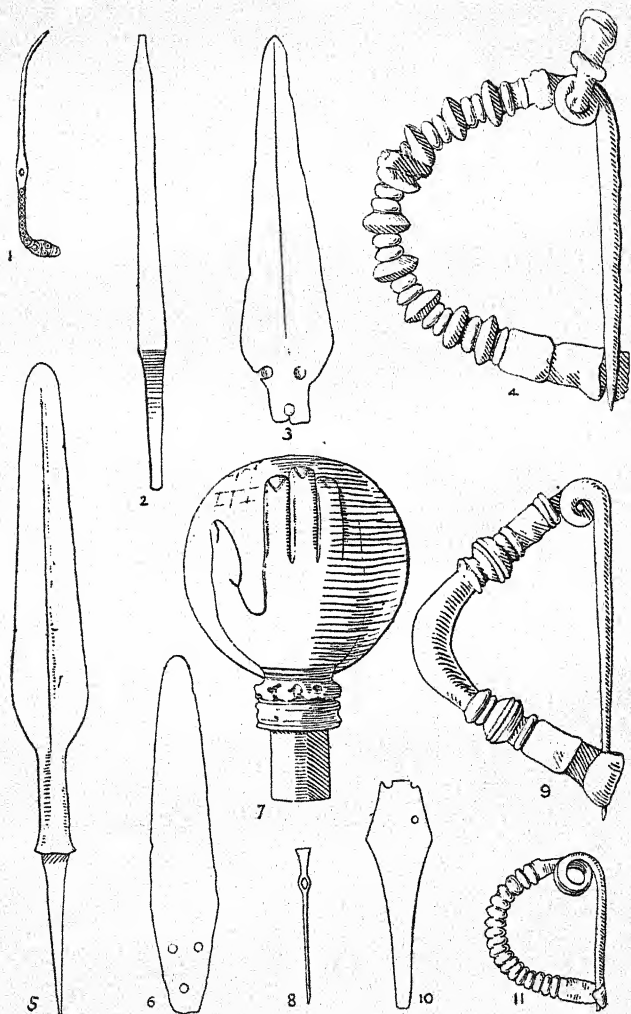


FIG. 38. SYRIAN WEAPONS, ETC.

CHAPTER VI

PALESTINE

[See the diagrams of stone implements, pp. 38-44 ; pottery, pp. 84, 85 ; alphabets, pp. 80-1.]

I. General.

The following chronological scheme is now accepted as a framework for Palestinian archaeology :

- | | |
|----------------|--|
| I. Stone Age | i. Palaeolithic
ii. Neolithic |
| II. Bronze Age | i. Early Canaanite (to 2000 B.C.)
ii. Middle Canaanite (2000-1600 B.C.)
iii. Late Canaanite (1600-1200 B.C.) |
| III. Iron Age | i. Early Palestinian (1200-600 B.C.)
(a) Philistine
(b) Israelite
ii. Middle Palestinian (600-100 B.C.)
(a) Jewish
(b) Hellenistic
iii. Late Palestinian (100 B.C.-A.D. 636)
(a) Roman
(b) Byzantine |
| IV. Modern | i. Early Arab (A.D. 636-1100)
ii. Middle Arab (A.D. 1100-1500)
iii. Late Arab (from A.D. 1500) |

In practice, the Hellenistic period is from 330 to 100 B.C., the Roman from 100 B.C. to A.D. 350, the Byzantine from A.D. 350 to 636.

Before the era of scientific excavation, which began in the latter part of the nineteenth century, the Holy Land had long attracted pilgrims and travellers, who described such ancient remains as were visible above ground. There are consequently fewer chances of making new discoveries in Palestine than in some other countries. The identification of places mentioned in the Bible was frequently attempted, but by no means always with success, and much remains to be done in this direction.

The principal classes of remains which may be examined without excavation are :

(i) Caves, natural or artificially enlarged, which have been inhabited in the Stone Age, or at later periods.

(ii) Dolmens and other megalithic remains (usually found in groups). The greater number are attributed to the end of the

Neolithic period, but standing stones are characteristic of Canaanite sanctuaries of later date.

(iii) Cisterns, wine-presses, and other rock-workings, including 'cup-marks' which are shallow depressions, usually circular, cut in the rock. These are very common and being often found in association with megaliths may sometimes have a religious significance.

(iv) *Tells*, or mounds, which are the remains of ancient settlements. These are situated as a rule on relatively low spurs or hillocks, within reach of a supply of water. Consisting as they do of a succession of settlements of which the later are built on the ruins of the earlier, they often rise to a considerable height, but compared with modern towns they cover a surprisingly small area. In some cases the original settlement is Neolithic, in others of the Canaanite or Early Palestinian periods. In the earliest a rampart of earth, in the later a thick wall of brick or stone, encloses a palace or fortress and perhaps a shrine. Some were abandoned at an early date, others in Byzantine or later times; others again are still covered by modern villages or by Moslem shrines or cemeteries. The pottery scattered on the surface is usually, of course, of the latest period of occupation, except where erosion or some other cause has bared earlier strata.

(v) *Khirbets* or ruin-fields, with little or no stratification, usually of the Roman period or later.

(vi) Rock-cut tombs, of various periods. Natural caves were doubtless first used for burials, but in the Early Canaanite period we find artificial chambers, roughly circular, with a low entrance blocked by a stone, in which the dead were laid (in a crouching position in the earliest, extended in later burials) with weapons, ornaments, and pottery vessels about them. This disposition continued with little modification till about the Roman period. In the Middle Canaanite period the entrance is often reached by a narrow shaft; later the entrance is sometimes through the roof, and the tomb more rectangular in form. Clay sarcophagi with tops representing human heads (like some found in Egypt) are known in the Early Palestinian period, and are sometimes laid on low benches of rock. In other instances shallow graves are dug in the floor, and the dead buried under stones.

Tombs of the Roman period have a central chamber, entered by a stone door revolving on a pivot. Projecting lengthwise from this chamber are the receptacles for the burial, sometimes large enough to contain in each a massive stone sarcophagus, sometimes in the form of narrow shafts (*kôkimi*). When a second burial took place, the earlier remains were often put into stone ossuaries, many of which are found bearing Hebrew inscriptions. Painted decoration is found at this period. Byzantine

TABLE OF WEST SEMITIC ALPHABETS
HEBREW ARAMAIC

Modern Hebrew	Moabite 9 cent. B.C.	Phoeni- cian 8 cent. B.C.	Old Hebrew Saba & Guzar 8-5 c. B.C.	Coins Macedonian B.C. A.D. 140-120 B.C. 7 66-70	Sarcophagi Samaritan B.C. A.D. 1 c. A.D.	Norab 1 cent. B.C.	Palmyra 5 cent. B.C.	Nabataean 1 cent. B.C.	Palmyrene 5 cent. A.D.	Syriac 5 cent. A.D.	Sassanid 1 cent. A.D.
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פ	𐤠	𐤡	𐤡𐤡𐤡𐤡	𐤡𐤡𐤡𐤡	𐤡𐤡𐤡𐤡	𐤠	𐤠	𐤠	𐤠	𐤠	𐤠𐤠𐤠
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FIG. 39.

[illegible]

FIG. 40.

F

tombs usually have three arched benches or receptacles (*arcossolia*) running parallel with the sides of the chamber. Lamps and other objects continued to be buried with the dead. Christian symbols were often carved or painted on the walls.

Simple grave-burials were probably in use at all periods and became universal after the Arab conquest.

(vii) Architectural remains such as the Roman ruins of Transjordan (e.g. at Amman and Jerash), the castles and churches of the Crusaders, together with ancient buildings still in use, lie somewhat outside our purview.

(viii) Inscriptions are mostly of the Roman and later periods. Greek and Latin, Hebrew and Aramaic, Arabic (Cufic and modern) and Armenian are all met with. Palestine, in contrast to Egypt and Mesopotamia, is remarkably poor in epigraphic material of early date. Chance discoveries, however, as well as further excavation may add to the small number of Semitic inscriptions, Egyptian hieroglyphic stelae and cuneiform tablets already discovered. A table of West Semitic alphabets is given on p. 80.

For the present, apart from the Biblical narrative we are mainly dependent on finds of pottery and small objects for information concerning the religious practices, civilization, and customs of Palestine and the foreign influences to which the country was, by its situation, peculiarly exposed. Egypt, Babylonia and Assyria, Cyprus and the Aegean, Syria, Greece, Rome, have all, at various periods, left traces of their penetration.

2. Classification of Objects by Periods.

[Diagrams (not strictly to scale) of pottery from the Neolithic to the Hellenistic period, including foreign importations, will be found at p. 84 f. The figures in brackets refer to these diagrams.]

I. Stone Age.

(i) Early Palaeolithic (Chelles, &c.) implements are common on the surface of the hill-sides and plateaux of Palestine and Transjordan.

Only a few of the many natural caves of Palestine have as yet been explored, but implements of the Middle and Late Palaeolithic periods have been found in some of them. A cave in Galilee, north of Tiberias, produced a skull-fragment of Neanderthal type with Le Moustier implements.

(ii) Flints of both the earlier and the later divisions of the Neolithic period are found on the surface and in caves. Pierced shells and beads of shell and perhaps of stone were used for ornament in this period. The pottery of the Neolithic settle-

ments is late in the period and forms a single group with the earliest Bronze Age pottery. It is hand-made, of coarse, gritty ware generally soft-baked and porous.

II. Bronze Age.

(i) *Early Canaanite pottery* develops from Neolithic; the ware is more carefully refined and eventually the slow wheel is introduced. The forms are: flat-bottomed jars with ledge-handles (Fig. 41, 1, 5), small pots often with lug-handles (Fig. 41, 3), jugs, bowls, and saucers. Decoration: modelled rope-pattern (Fig. 41, 1, 8), incisions, combed lines or burnishing on the surface, coloured wash or cream slip, vertical or crossed lines of red paint (Fig. 41, 5, 6, 10, 11). Fig. 41, 2 is red with a black top.

Objects. Flint arrow-heads, &c., continue throughout this and the two following periods. Bronze rings, weapons and implements, and gold ornaments appear. Carnelian, &c., beads are common.

(ii) *Middle Canaanite pottery* develops under foreign influences, and the use of the wheel becomes general. Much is gritty and not hard-baked, but by the end of the period we find a well-baked ware, imitating metal or alabaster forms, covered with cream slip and sometimes decorated with circles or ladder-pattern in red (Fig. 41, 15, 16, 19, 22). This is probably imported, as is the black 'punctured' ware decorated with patterns of dots (Fig. 41, 27). A thin greenish ware is also found (Fig. 41, 21). Jars are no longer flat-bottomed, but pointed, and generally have loop handles (Fig. 41, 12); juglets are pointed or have small 'button' bases (Fig. 41, 23, 26). Bowls of the form Fig. 41, 17 are common. Painted decoration, such as the frieze of fishes on Fig. 41, 20, becomes general. Lamps now first appear, the spout being only slightly pinched out (Fig. 41, 18). Four-spouted saucer lamps are not uncommon.

Objects. Egyptian influence is attested by XIIth Dynasty and Hyksos scarabs and alabaster vases. Terra-cotta figures begin to be found during this period, especially moulded plaques of the female goddess ('Astarte'). Spindle-whorls, common in later periods, and weavers' weights appear.

(iii) *Late Canaanite pottery*, much influenced by foreign importations, reaches the highest point of excellence in form and decoration. The clay is fairly well refined and hard-baked. Early in this period the hand-made Cypriote 'milk bowls' (Fig. 41, 30) and 'base-ring ware' (Fig. 41, 28, 29, 34) predominate, and are imitated locally. Painted pottery was at its best during the domination of the XVIIIth Egyptian Dynasty. On large vases a metope (or panel) arrangement is frequent (Fig. 41, 44). Elements of decoration are animals, birds, and fishes, the octopus and stylized tree, spirals, triangles, network and chess-board designs, ladder-pattern, zigzag and wavy lines.

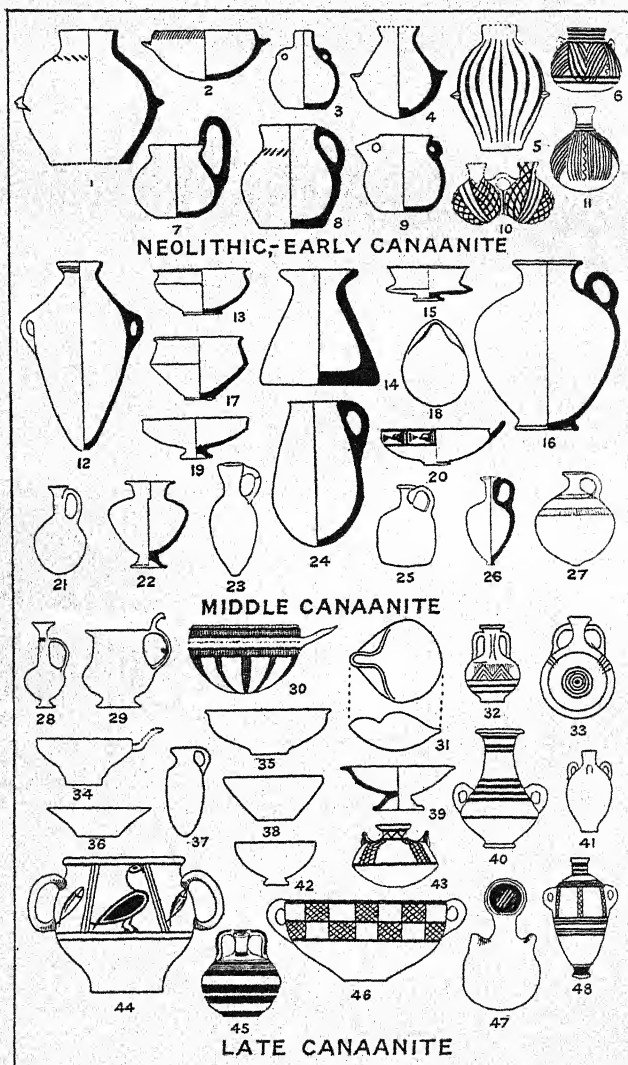


FIG. 41. PALESTINIAN POTTERY

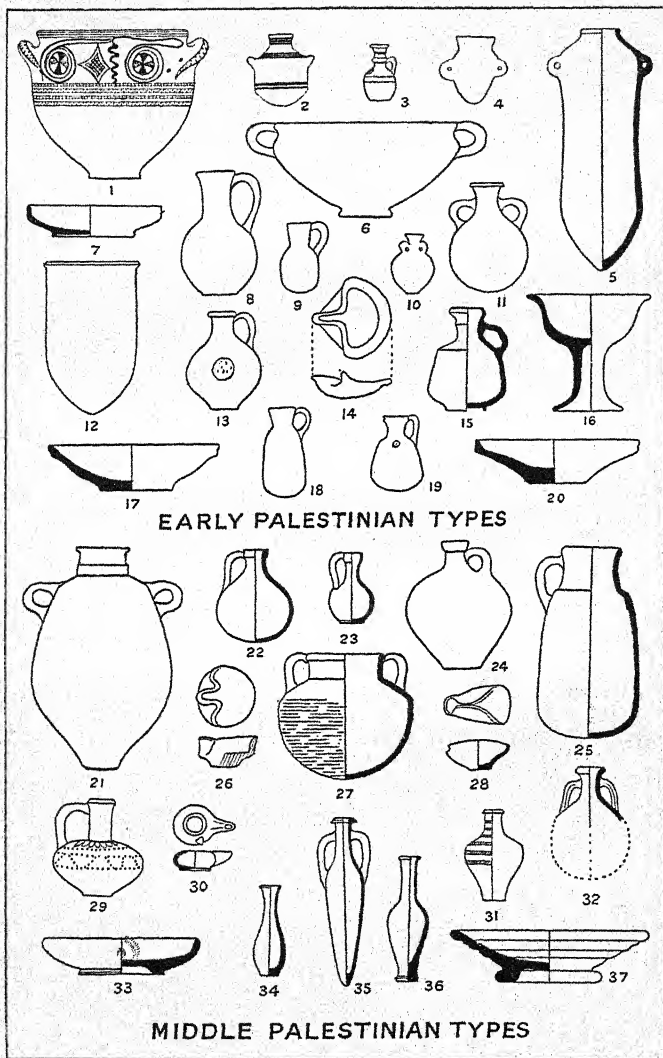


FIG. 42. PALESTINIAN POTTERY

Black, brown, red, and purple are the common colours. Some designs may have come from further east, but Aegean influence is strong (e.g. the stirrup-vase, Fig. 41, 45). Vessels are sometimes burnished, incised decoration (rows of nicks) occasionally appears. Lentoid flasks (Fig. 41, 33, 47) and a vessel like a cup and saucer made in one are found. Cooking-pots are of a gritty, brittle ware, often darkened by fire. Lamps (Fig. 41, 31) have a pronounced spout.

Objects. Stelae of Seti I and Rameses II have been found at Beisan, with other hieroglyphic inscriptions. Cuneiform tablets are few. Egyptian importations are alabaster and glass vases, blue glaze (*faience*) vessels, beads, amulets, and scarabs. Gold and ivory are common. Cylinder seals are sometimes Egyptian or Babylonian, more often Syro-Hittite. Small bronze and clay figures of deities and clay animals, doves, ducks, and serpents are found. To the latter part of this period, or the beginning of the next, belong clay model houses and hollow bell-shaped cult-objects and *kernoi* with small pots standing on a tubular ring.

III. Iron Age.

(i) *Early Palestinian pottery* is well baked, but inclined to be more gritty than that of the preceding period. To the beginning of this period belongs the 'Philistine' ware found at Ascalon and elsewhere. It resembles the proto-geometric pottery of Greece and Crete, painted bowls with horizontal handles (Fig. 42, 1), spouted jugs and stirrup-vases being its characteristic forms. Birds and spirals are common motives. Apart from this, painted decoration is almost confined to straight lines round the bodies of vessels or the rims of bowls. Concentric circles (black on red) are found on the small jugs imported from Cyprus (Fig. 42, 3) and their local imitations. Pebble-burnishing on a red slip is common; pots, jugs and juglets (Fig. 42, 6, 8, 18) and bowls being often so treated. Later (Hebrew monarchy period), plain jugs (Fig. 42, 15) and libation-chalices on high stems (Fig. 42, 16) are common in tombs. The forms of jars (Fig. 42, 5), juglets, and other vases deteriorate, and painted and burnished decoration becomes rare. Some globular juglets have a black surface (Fig. 42, 9). Lamps often have flat rims (Fig. 42, 14) and, later, flattened bottoms or disk bases (cf. Fig. 42, 26).

Objects. Scarabs, &c., continue, though Egyptian influence wanes. Iron weapons and implements appear, but bronze continues in common use. Bronze brooches (*fibulae*) appear. Inscribed seals and (at Samaria) ostraca have been found dating from the Hebrew monarchy. Of the same age are female figurines with the lower part forming a solid base, and many rude animal figures; these are often coated with white.

(ii) *Middle Palestinian pottery* displays ungainly shapes (Fig. 42, 21-5) and few notable features till c. 300 B.C., when the advent of Hellenistic forms and wares changes its character. Jar-handles with Hebrew stamps should be noted. Fragments of Greek 'orientalizing' and Attic vases are found occasionally. 'Jewish' lamps on high bases (Fig. 42, 26) continue from the preceding period, and a new closed form is introduced (Fig. 42, 28). In the Hellenistic period black varnished ware is common at first, but during the third century B.C. deteriorates and gives way to red glazed ware. Plates and bowls of these wares often have stamped ornament (Fig. 42, 33). White wreaths are sometimes painted on the black ware; bottles (Fig. 42, 31, 34-6) and jugs (Fig. 42, 29) are often decorated with red or black bands on a light ground. Moulded 'Megarian' bowls are sometimes found. Jar-handles with Greek stamps, mainly Rhodian of about 220-150 B.C., are very common. Cooking-pots (Fig. 42, 27) of gritty ware continue to be made. Closed lamps (Fig. 42, 30) largely supersede the earlier form; in the latter half of the Hellenistic period they are usually made in moulds.

Objects. Coins are introduced in this period. Phoenician, Ptolemaic, and Seleucid coins are found, and a native coinage begins with the Maccabees. Moulded figurines of Greek style make their appearance.

(iii) *Late Palestinian pottery* embraces the Roman and Byzantine periods, to the Arab conquest. At first Hellenistic forms persist and red glazed Arretine ware is imported. Later in the Roman period we find bowls decorated with a hatching of small wedge-shaped impressions. The circular Roman lamp of thin ware with moulded decoration is succeeded by a coarser slipper-shaped Byzantine type, which sometimes bears a Greek inscription, more or less deformed. The practice of making large jars and cooking-pots of ribbed ware began in the Roman period and lasted throughout the Byzantine; no pottery is more commonly found lying on the surface than are such ribbed fragments. The jars are of squat shape with handles high on the shoulder. In the sixth century wedge-shaped nicks (three on either side) are often incised on the shoulders of small jugs and bottles, and a shallow wavy line or bands of fine lines on bowls, jugs, &c. Impressed thumb-prints on raised bands are another form of decoration. Red glazed plates continue to be found, sometimes with the figure of a bird or animal stamped on them. Other glazed wares, green, yellow, &c., begin to be manufactured. Much Byzantine pottery is light drab, with a smooth surface; a black ware is also found.

Objects. Coins found are those of Herod and his successors, of the Roman procurators, and of the Jewish revolts, and chiefly of the Roman and Byzantine Emperors. Glass vases are

exceedingly common throughout the period. Fragments of carved stone and marble vessels, plaques, capitals, &c., are frequently seen. Roof-tiles are common, those of the Roman period sometimes bearing the stamp of the Tenth Legion.

(iv) Little need be said of *Arab pottery*. The vogue of ribbed ware does not survive long. Green, &c., glaze becomes common. A painted decoration singularly like the geometrical forms of Late Canaanite pottery should be noted. Incised decoration is made with a sharp point, elaborate patterns being sometimes formed. The later Byzantine form of lamp continues for some time, but often bears an Arabic inscription.

CHAPTER VII

EGYPT

[See the diagrams of stone implements, pp. 38-43, pottery, pp. 91, 93; and the table of hieroglyphic signs liable to be confused with each other, p. 27.]

Badarian Prehistoric Age. Settlements with small huts. Pottery very thin, hard, polished black, hand-made. Rare figures of ivory or pottery. Glazed stone beads. Slate palettes and malachite eye paint.

Amratian Prehistoric Age. Cemeteries of round or oval pits on the desert; no towns known. Red faced pottery, often with lustrous black top, earliest with patterns of white slip lines: all hand-made. Block figures of ivory or paste. Combs with long teeth and animal tops.

Gerzean Prehistoric Age. Graves, square pits. Red faced, and much coarse brown pottery. Buff with red painting of cordage, spirals, and ships. Pot forms copied from stone. Some pots globular with wavy ledge-handles, changing to cylinders with wavy band. Slate palettes in all prehistoric periods.

Early Dynasties. Towns and cemeteries. Great mastabas of brick. Wooden coffins begin. Great jars; hard, wheel-made pottery. Glazed tiles, &c. Stone bowls common. Cylinder sealings on clay.

Pyramid Period, IV-VI Dynasties. Sculptured stone tomb-chapels. Diorite bowls. Thick brown pot offering bowls. Limestone statues, painted. Carnelian amulets in strings.

VI-XI Dynasties. Copper mirrors begin. Buttons, wide face, un-Egyptian work. Pottery models of houses placed on grave-edge.

Middle Kingdom, XII-XIII Dynasties. Brick pyramids. Large rock tomb-chapels, painted. Hard drab pottery. Alabaster kohls-pots, good forms. Globular beads, large; carnelian, amethyst, and green glaze. Scroll pattern scarabs.

XIV-XVII Dynasties. Small flasks with handles, black with pricked patterns. Coarsely cut scarabs. Shell beads.

All dates before this are much earlier in the Egyptian reckoning than in modern works.

New Kingdom, XVIII-XXI Dynasties, 1587-952 B.C. Small painted tombs. Pottery, red face black edge to 1500; buff, red and black lines to 1400; blue bands 1400-1200. Hard polished drab, about 1400-1350. Glass beads, &c., abundant 1400-1300.

Glaze deep blue 1500, brilliant blue 1400, poor blue 1300, green 1200: deep blue ushabtis 1100, pale and rough 1000. Ushabtis, stone or wood engraved 1550-1450, pottery 1450, to very coarse 1250, wood very coarse by 1250; glazed fine 1300, decline to small rough lumps 800. Beads, minute coloured glaze and stone to 1450, thin disks 1450-1350, coloured pastes red and blue 1450 to 1300, yellow glass mainly 1300-1200, poor glaze after 1200. Alabaster kohl-pots, clumsy forms to 1450; tubes of stone, glaze, wood, or reed 1450-1200.

Bubastites, XXII-XXV Dynasties, 950-664 B.C. Clumsy large jars, widening to bottom, small handles. Green glazed figures of cat-head goddess, cats, pigs, and sacred eyes; coarse glass beads, yellow and black; copper wire bracelets. Glass beads with blue spots in circles of brown and white. Scarabs coarse and worst at 750. Fine work revived at 700 by Ethiopians. Glazes dull, dirty green. Coffins very roughly painted.

Saites, XXVI-XXX Dynasties, 664-342 B.C. Pottery clumsy, mostly rough; some thin, smooth red. Greek influence; silver coins from 500 onward. Iron tools beginning. Glaze pale greyish and olive; some fine blue at 350. No glass. Bronze figures common. Ushabtis with back pier and beard; fine 650 to poor at 350.

Ptolemies, 332-30 B.C. Pottery clumsy and small. Many Rhodian jars with Greek stamped handles. Glazes, dark violet and yellow-green. Glass revived for inlay figures in shrines: minute mosaic begins. Glazed beads scarce, no scarabs. Large copper coins, silver tetradrachms, base in later time, and concave on reverse.

Romans, 30 B.C.-A.D. 641. The earlier half, to A.D. 300. Large brown amphorae, peg bottoms; ribbed after 180, wide ribbing at first, then narrower. Glass blown; fine white and cut facets in 1st cent.; hollow brims 2nd-4th; stems and pressed feet, 3rd-4th. Glass mosaic 1st cent.; coarser wall mosaic 2nd cent. Glaze coarse blue, on thick clumsy bowls and jugs. Red brick buildings as well as mud brick. Coins: billon tetradrachms in 1st cent., almost copper in 2nd, small copper dumps in 3rd, leaden tokens from A.D. 180 to 260. Some large copper in 1st and 2nd, thinner than the Ptolemaic. Potsherds used for writing receipts and letters. Abundance of moulded terra-cottas, and small lamps.

Roman, Second Period, A.D. 300-641. The Constantinian Age brings in new styles. Much salmon-coloured hard pottery, mainly platters and flat dishes. Brown amphorae soft and smaller, with narrow ribbing. No glaze. Much very thin glass. Coins: little thin flat copper, as in rest of Empire, ending about 450. No Egyptian coinage, except a very few rough lumps from Justinian to Heraclius, I+B on back. Letters written on potsherds and flakes of limestone.

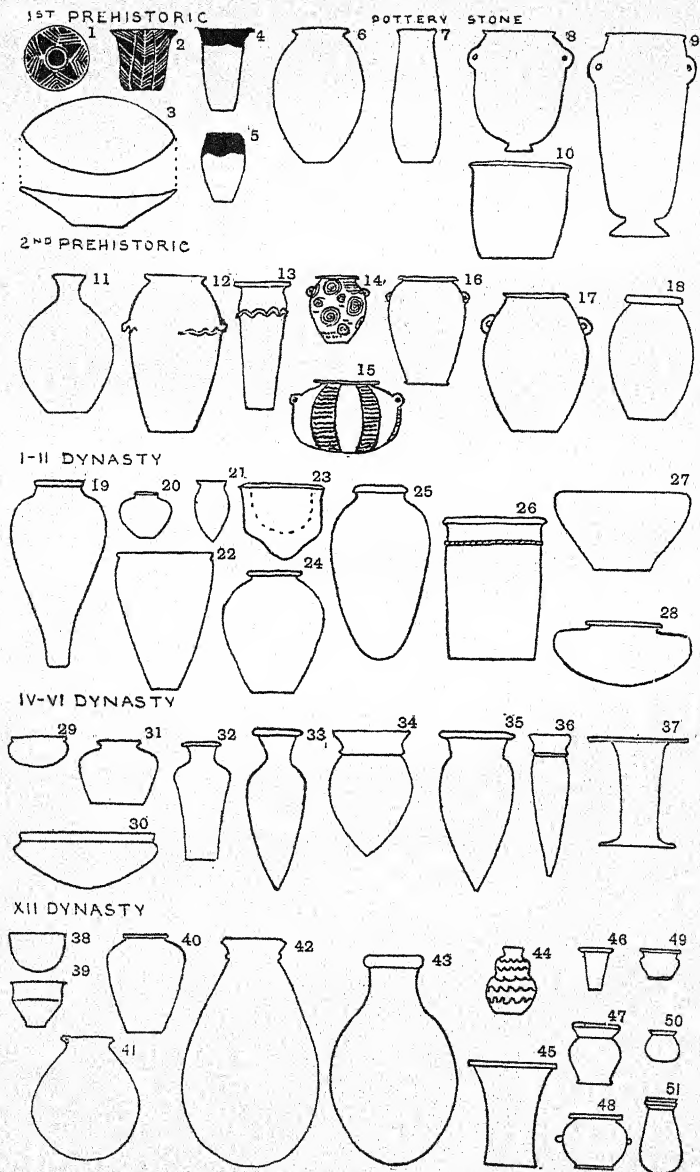


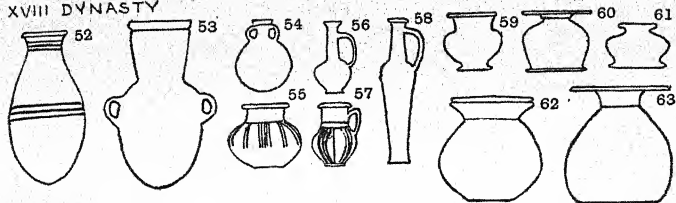
FIG. 43. EGYPTIAN POTTERY TYPES

Red brick the material for all large buildings. Limestone capitals of debased leafage. Rudely cut relief patterns in wood. Coarsely carved and turned bone or ivory. Pottery in Byzantine Age with white facing and rudely painted figures. Textiles, with embroidery in colours, and especially purple disks with thread designs of the earlier Arab period. A characteristic of late Roman and Arab mounds is the organic smell.

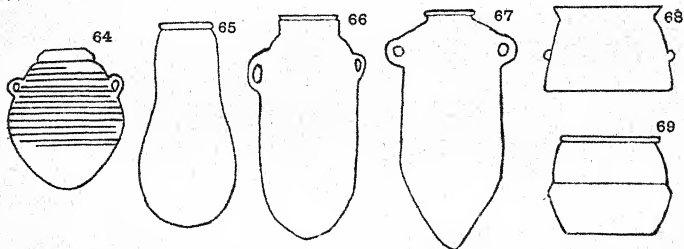
Muhammadian Period. Seventh to fifteenth centuries. Characterized by great amounts of glazed pottery. Smaller antiquities found in cemeteries or on ruined sites, the earliest transitional, and related to Coptic examples of the same kinds. Pottery: lamps at first continue Christian forms and are unglazed; afterwards long spouted lamps of dark green glaze. Fragments of vessels, &c., from the rubbish-heaps of old Cairo are glazed; a typical faience has a soft sandy body of light colour with painted designs in blue or blue and brown with transparent glaze. Those of the Mamluk period, and probably some of earlier date, show a general resemblance to Western Asiatic contemporary wares, due to importation of potters from Syria, Asia Minor, and Persia (between twelfth and fifteenth centuries). Other varieties have decoration in metallic lustre on an opaque white tin glaze; others again have monochrome glazes imitating imported Chinese wares. Inscriptions very rare. Glass: if found, is in fragments; rich coloured enamel designs are seldom earlier than the thirteenth century. Textiles: chiefly found in small pieces; the colours rich; ornament consisting of geometrical designs and Cufic inscriptions. Any silk, or printed patterns, should be secured.

No information about papyri is given here, for the reason that any site containing them should not be touched except by a trained excavator.

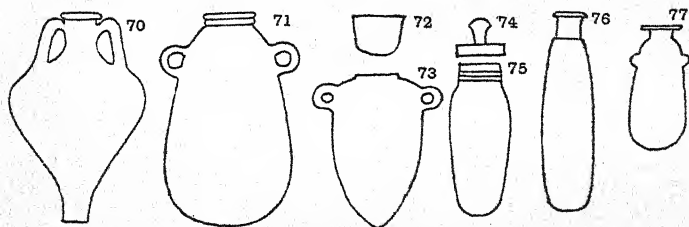
XVIII DYNASTY



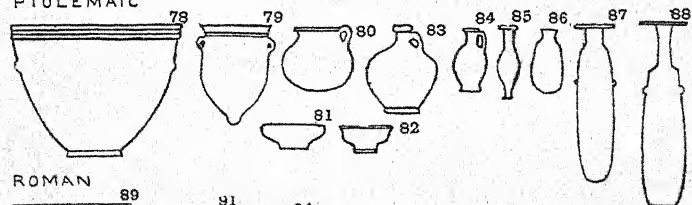
XX-XXII DYNASTY



XXVI DYNASTY



PTOLEMAIC



ROMAN



FIG. 44. EGYPTIAN POTTERY TYPES

CHAPTER VIII

MESOPOTAMIA ('IRAQ)

[See the diagrams of stone implements, pp. 38-43; pottery and brick-forms, p. 97; cuneiform signs, and other scripts, p. 98.]

Mesopotamian antiquities are nearly always found in **Tells**, or artificial mounds, which are the sites of ancient towns or temples. The surrounding plain for a distance of several hundred yards out, whether steppe-desert or untilled land, will generally be found to be productive of antiquities, either a few inches or few feet deep or, in the case of the desert, actually lying upon the surface. These are often the result of rain-storms washing out antiquities from the tell itself. Each tell or ganglion of connected tells usually has a number of small subsidiary tells round about it, the sites of small isolated buildings or villages connected with the central settlement. Originally the settlements were built upon natural rises of the ground which stood up as islands in the fen-country.

Visitors should give the local names of tells in Arabic characters, when possible, so that mistakes in transliteration into English may be avoided. Antiquities bought in the neighbourhood of a tell should be noted as coming from that neighbourhood. Depredations by Arabs (or by others!) should be noted, and reported to the nearest Political Officer or Inspector of Antiquities. The barbarous practice of forcibly dislodging inscribed bricks from walls, as trophies and 'souvenirs', which has unhappily been common during the war, should never be imitated and always discountenanced as much as possible.

Other good spots for antiquities than tells are rare. In the mountainous and stony country of the North we may meet with **rock-sculptures**, as at Bavian, and these should always be recorded by a traveller, even if he is not certain that they have not been remarked before: something new may turn up at any time. Antiquities acquired in the neighbourhood of such monuments should be noted, and their precise place of origin ascertained, if possible, as in this way the site of some ancient settlement adjoining the monument may be identified. The open ruin-fields, or *Khirbas*, characteristic of Palestine are not usual, except in the case of Parthian or Sassanian palace ruins such as Ctesiphon, Hatra, or Ukhaidhir, which were often abandoned almost as soon as they were built, so that no later population could pile up rubbish-heaps or graves about them.

In order to aid the visitor to get some idea of the age of a tell or other site from the antiquities found on its surface and its neighbourhood, and so to be able to give some idea of what is likely to be found in it, the following hints have been drawn up.

In the first place, most of the surface remains are, as elsewhere, pottery sherds. These should tell us their date by their appearance. It must be said, however, that our experience on the subject of the development of Mesopotamian pottery is limited. Owing to the attention of Assyriologists having been so long focused on the study of the cuneiform records, to the neglect of general archaeology, we have nothing like the knowledge of these things that we have in Egypt or in Greece. Such minutiae of information as our common knowledge of ceramic development in Egypt or in Greece gives us with regard to these countries, enabling us to date sites with great accuracy, are not yet available for Mesopotamia. And if for this reason all possible information as to the objects found on archaeological sites is desirable, it is also impossible yet to give the visitor any absolute guide to the distinctive appearance of pottery at *every* period. The main periods are known. The 'prehistoric', the Sumerian, the late Babylonian, and the Parthian styles are easily distinguishable. If a visitor is able to tell us that such-and-such a mound is prehistoric or is Parthian, or that settlements of both periods existed on it, this is what we want. One of the most general of criteria with regard to pottery is whether it is glazed or not. If glazed, it is, generally speaking, late; if painted with geometrical or wavy designs in black or red it may be either very early (prehistoric) or very late: the early ware is easily distinguishable, however, from the late ware by its greater hardness and fineness. Other things besides pottery are of course found, and the presence or the absence of metal, and the occurrence of stone implements, are important. But it must be remembered that stone was used long into the 'Bronze' Age, and contemporaneously with copper. There is no sudden break between the two periods. Fragments of shell and mother-of-pearl, often with incised designs, are very characteristic of the earliest period. Coins are of late date; a tell with coins on it is certain to contain buildings as late as the fourth or third century B.C. (though it may also contain far older buildings as well). One of the most useful criteria of age is: Bricks. The form of the brick is a very good guide to date. The Babylonians used both kiln-baked and crude bricks. The oldest type, whether baked or crude, is plano-convex in form, and uninscribed. The mortar is bitumen. Later on rectangular bricks, often square, made in moulds, were introduced. These usually bore the name of the royal builder. Later on bricks became generally oblong and much like our own. In the sixth century the square shape was revived. Both shapes

were in use at the Nebuchadnezzar period. Glazed bricks were then common. Under the Persians mortar took the place of bitumen. Under the Parthians and Sassanians, bricks were yellow, oblong, small, and very hard. Details will be found below.

The names of various excavated sites are given in brackets as the 'classical' sources of information on certain points, and as the places from which type-antiquities have come to our Museums. Ancient names are in capitals; museums in italics.

I. PREHISTORIC (?) AGE: *Chalcolithic* ('*aeneolithic*') period; before 3500 B.C.

Until quite recently no traces of the Stone Age had been discovered in Babylonia other than a few possible palaeoliths lying on the surface of the desert: all traces of a Neolithic Age were supposed to have been buried beneath the alluvium of the valley. In Assyria, however, neolithic traces in the shape of obsidian flakes had been discovered by the late L. W. King in the course of his excavation of the mound of Kuyunjik (NINEVEH), besides fragments of painted pottery resembling those from the earliest deposits in Asia Minor and those found by the American geologist Pumpelly in his diggings in the *kurgans* of Turkestan (to which he assigned an extremely remote date B.C.). In Persia, and about the head of the Persian Gulf, somewhat similar pottery was discovered by de Morgan and the other French excavators at Susa, Tepé Musyān, Bandar Bushir, and other places: here again the dates were put at a very remote period. With the exception of a few flint saw-blades from Warka¹, Fara, Zurghul, and Babylon², no similar remains had been found in Babylonia until, in 1918, R. Campbell Thompson, exploring on behalf of the British Museum, discovered flint and obsidian flakes and painted pottery lying on the surface of the desert at Tell Abu Shahrain (ERIDU), and also at Tell Muqayyar (UR). The continued excavations carried out by H. R. Hall for the Museum in 1919 have produced more British evidence from both places, besides a new 'prehistoric' site at Tell al-Ma'abed or Tell al-'Ubaid near Ur. It seems that these antiquities date after the end of the true neolithic, i.e. to the succeeding 'chalcolithic', age; whether they are really prehistoric, as regards Babylonian history, must until more evidence from stratified deposits is found remain undecided. They prove the

¹ Found by Loftus in 1854: their early date was not recognized at the time.

² Koldewey, *Excavations at Babylon*, E. T., p. 261, fig. 182. Koldewey curiously speaks of the saw-blades as 'palaeolithic'. They are, of course, nothing of the sort.

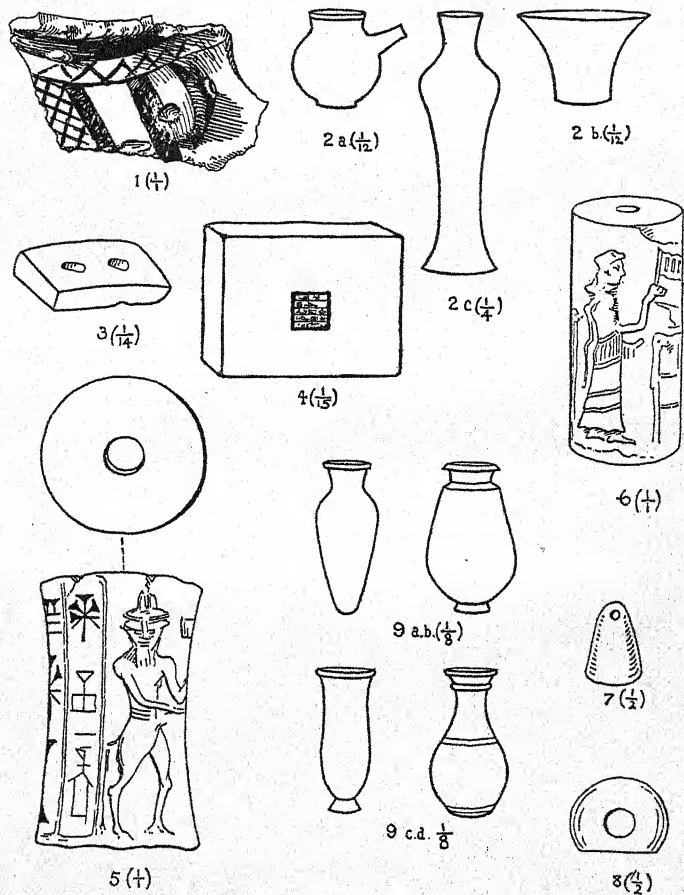
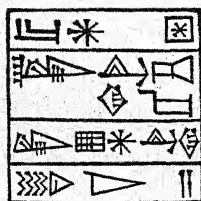
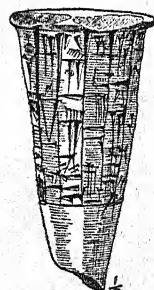
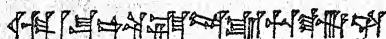
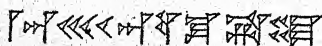


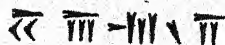
FIG. 45. MESOPOTAMIAN POTTERY, SEALS, ETC.

10 $\frac{1}{3}$ 11 $\frac{1}{3}$ 12 $\frac{1}{3}$ 13 $\frac{1}{4}$ 14 $\frac{1}{2}$ 15 $\frac{1}{3}$ 

16



17



18

19 20

21

Fig. 46. CUNEIFORM AND OTHER SCRIPTS

occupation of the head of the Persian Gulf at the beginning of history by a people whose primitive ceramic art was closely akin to that of early Elam, and in the matter of the painting of pottery distinct from that of the Sumerians. It is not, however, possible yet to say that they were not Sumerians: they may have been proto-Sumerians, who altered their ceramic style as other peoples have done. Prehistoric shapes are met with in the early Sumerian period, although the painting had died out.

Characteristics: flint, chert, obsidian, green and red jasper, and quartz-crystal flakes, arrowheads, cores, and saw-blades. Chert and limestone rough hoe-blades (easily mistaken for palaeolithic implements; they are, however, much flatter); polished serpentine or jasper celts; lentoid (lentil-shaped), amygdaloid (almond-shaped), and discoid beads of cornelian, crystal, obsidian, &c., unpolished; nails of translucent quartz and obsidian (obviously imitations of metal types); hard grey pottery sickles, pottery cones of various sizes, and pottery objects like gigantic nails bent up at the ends; pottery painted with designs in black, usually geometrical (see Fig. 45, 1), but sometimes showing plant-forms or even animals. This ware is often very fine, so much so as to look as if wheel-made. The shapes are chiefly bowls (often closely resembling early Egyptian stone bowl types), pots with suspension-handles or lugs, and spouted 'kettles'. All these objects are at Shahrain and al-'Ubaid found lying on the desert surface at the distance of 50 or 100 yards from the tell; they are supposed to have been washed out of the lower strata of the latter by rains, but though this may have been and probably was partly the case at Shahrain, the mound at al-'Ubaid is so small that this can hardly be the explanation, so that these objects there are probably remains from an ancient village-settlement on the spot, evidence for which was discovered, with its graves, by C. L. Woolley in the later excavation of 1924. Objects of this kind should be recorded from any site, and the neighbourhood of a desert tell should always be searched for them.

II. EARLY BRONZE (Copper) AGE: *First Sumerian (pre-Sargonic) Period*; c. 3200-2700 B. C. Earliest Sumerian civilization.

Typical sites. Older strata at Telloh (LAGASH); Fara (SHURUPPAK); al-'Ubaid (E-NINKHURSAG); Shahrain (ERIDU); tombs, Muqayyar (UR).

Characteristics. *Writing.* First appearance of script, already conventionalized from pictographs. Cut on stone and incised on clay tablets and bricks of characteristic early style. *Brick* buildings, with crenellated walls (until the discovery of al-'Ubaid supposed to date only from the later Sumerian period) of typical *plano-convex bricks*, baked or crude, usually with thumb-mark down length of convex side (Shahrain), or

with two thumb-holes (for carrying the brick when wet?), or vent-holes ('Ubaïd); at first uninscribed, later with long inscriptions; measuring $10 \times 6 \times 2\frac{1}{4}$ ins. (Shahrain), and $8 \times 6 \times 2\frac{1}{4}$ ins. ('Ubaïd); poorly shaped and baked (see Fig. 45, 3). Bitumen used for mortar; laid very thick. Hard white stucco on internal faces of crude brick house walls, often decorated with red, white, and black painted horizontal stripes (Shahrain). *Pottery*. Wheel and hand-made; drab, fine or coarse paste, unpainted and usually undecorated. Typical shapes: (see Fig. 45, 2 a b c) mostly handleless vases, and cups, and spouted 'kettles' (again often resembling early Egyptian types).

Metals: Copper. Extensive use: large copper figures of animals, heads cast, bodies of copper plates fastened by nails over a core of clay with a mixture of bitumen and straw; the figures have eyes, tongues, and teeth of red and white stone and nacre (al-'Ubaïd); goat's head with inlaid eyes of nacre (Fara). Otherwise ordinary treatment of eye shows a number of wrinkle lines round it, and it is always disproportionately large (bull's heads, al-'Ubaïd and Telloh). Weapons: daggers, axeheads, spearheads (both socketed and tanged). Vases, lamps, &c. (Ur). Pins (for fastening the dress) with ribbed spherical lapis heads (Ur). Small fragments of copper or bronze on the surface of a tell should never be neglected, as there may be enough in any fragment to give an idea of possible archaic remains within the tell.

Silver. Rare. Fine engraved vase of Entemena (Telloh, *Louvre*). Silver vases, pins, &c., from Ur; also a silver table. Pins with lapis heads as before.

Gold. Not uncommon on surface. Copper nails with gold-plated heads (Shahrain). Lavishly used in early Sumerian times: discoveries in 'royal' tombs of Meskalamdug and Shubad at Ur (Woolley, 1927-8): vases, lamps, weapons, royal headdresses, &c.

Stone. Portrait figures in round (Bismâya, Telloh, &c.), usually representing men, with face and head shaven; very prominent large curved nose; usually squatting with arms crossed, sometimes standing; only garment a kilt apparently made of locks of natural wool. Usually inscribed in archaic characters on back of shoulders. Material: a grey or a white limestone most usual; tufa and dolerite also used. Reliefs: large stelae (Stele of the Vultures; Telloh, *Louvre*, fragment in *B. M.*), completely inscribed; small relief plaques, inscribed (Telloh, *Louvre*). Flint carved and engraved cylinder-seals, of limestone, black basalt, jasper, diorite, &c., sometimes (Ur) fastened to the great lapis-headed pins, which with the seal were characteristic of Babylonian costume (Hdt. i. 195). (We know from a Babylonian tradition that these pins were often used as stilettos.) Vases, bowls, and cups (fine examples from

Ur), of pink and white limestone, alabaster, arragonite, and breccia. Maceheads of breccia, granite, &c., of same type as the early Egyptian (Shahrain).

Shell. Very largely used for decoration; small plaques of nacre often engraved with scenes of men worshipping, &c. (Tellah, Ur), and even humorous (?) scenes (Ur; on inlaid harp); also gaming boards (Ur); tessellated pillars with nacre plaques ('Ubaid). Seal-cylinders of shell.

Wood. Rarely survives: small beams plated with copper ('Ubaid). Remains of four-wheeled chariots (Ur and Kish), harps (Ur), &c.

Burials. Brick-vault tombs in the case of important personages (Ur). Mat-burials; bodies contracted; funerary furniture, copper, stone or pottery drinking-cups held near mouth: copper weapons, fish-hooks, net weights; beads of agate, lapis, shell (unpolished); colour-dishes (Fara). Supposed royal graves at Ur elaborately furnished with objects of gold and silver as well as stone beads, weapons of ordinary as well as ceremonial use in precious metal as well as copper; golden shells for colour; golden headdresses, &c. But finds such as these are not likely to be made often. (The idea that the Babylonians ever burnt their dead is now discredited; the supposed 'fire-necropoles' at Zurghul, &c., are not substantiated.)

The burials are hard to distinguish from similar contracted interments of later date, except that the furniture is more abundant in early times and mat graves are unusual in later days. The bodies are usually found in bad condition, nothing usually but the skull being recoverable. This is owing to the dampness of the soil of 'Iraq in comparison with that of drier countries like Egypt and Turkestan, where bodies are often perfectly preserved. When nothing can be done with them, even with the help of petroleum wax, the position of the bones should be sketched as carefully as possible, for record.

Mounds of this age may be known by the occurrence on the surface of scraps of oxydized copper, nails, &c.; shell-fragments; undecorated light drab sherds; and the typical small plano-convex bricks.

III. MIDDLE BRONZE AGE. I. *Early Semitic or Akkadian (Sargonid) period*; c. 2700-2500 B. C.

Characteristics. Less crude style of art: development of writing (see Fig. 46, 10); first inscribed clay tablets of usual style; beginnings of cuneiform, developed from the archaic semi-pictographic character. Bricks still plano-convex; stamped inscriptions begin. Stone maceheads of same type as earlier. Large and well-cut cylinder-seals of fine limestone, lapis,

diorite, granite, and shell are characteristic of the period: they are generally of an easily recognizable form (reel-shaped) with sides showing a marked concavity (see Fig. 45, 5). The great development of art is shown by the stele of Naram-Sin (*Louvre*) found at Susa. Not many mounds of this period have been dug, but interesting remains of it were found in the upper strata of the graves at Ur by Woolley, which do not differ materially from those of the earlier age.

2. *Later Sumerian (Gudea) and early Semitic Babylonian (Hammurabi) periods*; c. 2500-1800 B. C.

Characteristics. Typical 'Gudea' style of sculpture, in round and relief (Telloh, *Louvre*); materials hard diorite, dolerite and basalt as well as limestone: characteristic treatment of eye with heavily marked brows: elaborate tiaras and headdresses of female figures, &c. Very high development. Regular use of cuneiform on clay tablets and cones (see Fig. 46, 13-15); non-cuneiform character (in a developed form) still used in brick stamps (Fig. 46, 10) and on stone monuments. Bricks (Fig. 45, 4) now rectangular and well made, either square (14 ins., usually, by $2\frac{1}{2}$ ins. thick) or oblong ($11\frac{1}{2} \times 8 \times 2\frac{1}{2}$ ins., or $10 \times 5 \times 2\frac{1}{2}$ ins.) with stamps or incised inscriptions of the Third Dynasty of Ur, Ur-Nammu, Shulgi, Bur-Sin, and of the earlier prince Gudea and other kings (Fig. 46, 10), from Ur, Shahrain, Telloh, Niffer, &c. Bricks of Bur-Sin from Shahrain often have inscription-stamps also on the smaller sides (thickness). Great buildings of crude and baked brick (Telloh, Ur); temple-towers (ziggurrats) of crude brick faced with burnt brick (Ur, Shahrain, Niffer). Temple and town ruins of the Third Ur Dynasty and succeeding Isin-Larsam period and Hammurabi's age (Ur, Babylon): crude brick: plans always confused and haphazard. Bitumen still used for mortar. Burials, contracted, often in double pots (mouth to mouth), sealed with bitumen, generally in pottery coffins (*larnakes*) often without lids, and in brick-vault tombs. With the bodies are found large numbers of agate and cornelian beads, unpolished.

Mounds of this period may be recognized by the typical square or oblong bricks (often with thumb-holes), with stamps of kings' names, &c., in non-cuneiform characters, or with hand-incised inscriptions in early cuneiform, made while the clay was wet; clay tablets or cones inscribed in early cuneiform; copper nails (those with gold-plated heads found at Shahrain may also date from this time); drab or black pottery sherds with impressed or incised designs, generally rough and evidently made with a piece of stick or the thumb-nail; rough stone quern-slabs with rubbers, grinding and hammer-stones, &c.; and the burials described above (these, however, also occur in later times).

IV. LATER BRONZE AGE: *Kassite, Middle Babylonian, and Early Assyrian periods*; c. 1800-1000 B. C.

Characteristics. Stabilization of Babylonian art; typical 'Kassite' cylinder-seals with straight sides (see Fig. 45, 6); disappearance of old non-cuneiform character with gradual disuse of Sumerian; early stone-cut inscriptions in cuneiform (see Fig. 46, 16; an Elamite inscription). Occasional and rare appearance of glazed pottery (imitation of Egyptian), and multi-coloured glass; early Assyrian sculpture (those unversed in minutiae of Mesopotamian art will only be able to tell this earlier work from the later by the earlier style of the accompanying inscriptions). Not many mounds of this period have been dug. Interesting remains, however, from Qala'at Sharqat (ASHUR), including especially polychrome faience of about 1200 B. C. Important early Assyrian monuments from Ashur.

V. EARLY IRON AGE: 1. *Late Babylonian and Assyrian periods*; c. 1000-540 B. C.

Characteristics. Flourishing period of Assyrian art and writing (for details see the archaeological books, which are very full on this period). Mounds may be known by the occurrence of fragments of granite or basalt bowl-urns, often with feet; pieces or whole vases of the multi-coloured opaque glass usually called 'Phoenician' (which are already found in the preceding period); alabaster pots; straight-sided cylinder-seals (see Fig. 45, 6); Syrian conical seals of steatite (Fig. 45, 7); small and rude clay figures of deities, such as Ishtar or Papsukal (the guardian of buildings), and animals, such as horses, sheep, doves, ducks, &c.; bronze pins, often with birds on the heads; baked clay tablets of the fine Kuyunjik type (see Fig. 46, 12; script, Fig. 46, 17); pottery lamps with long protruding curved nozzles; pottery vases simple and undecorated save by incised lines, as for many centuries past (for types see Fig. 45, 9 a b c d); polychrome glazed ware with designs of rosettes, chevrons, &c.; light-blue glazed ware introduced from Egypt towards end of period; large pots without feet common for storage of grain and oil, sometimes for tablets: mouth often closed with a brick. Stone pithoi are often found. Vertical drains or sinks, made of a number of pottery cylindrical drums, fitting on top of or into one another, are found everywhere on town-mounds of this period; visitors should avoid tumbling into them, as they are often open or only covered by a very thin crust of earth. Usually they are perforated to allow of soaking into the surrounding earth, and are, when excavated whole, generally found capped by a beehive-shaped perforated cover. Sometimes these drains were made of old pots with their lower parts broken off, and fitted into one another. Secular buildings were of burnt brick; sacred buildings usually

of crude brick, from religious conservatism. Crude bricks nearly always oblong; burnt bricks square (14 ins.) or oblong (9×6×3 ins.). The burnt brick of Nebuchadnezzar's time is extraordinarily fine and hard, and the bitumen-mortar so finely spread as to be almost invisible (Babylon). Walls of this reign have a rock-like solidity and tenacity that should make them easily recognizable. Those of immediately preceding reigns show the bitumen far more clearly, and the bricks are usually not as finely made as Nebuchadnezzar's; at Babylon the latter's work is thus at once distinguishable from that of Nabopolassar. A typical brick-inscription of Nebuchadnezzar is illustrated above, Fig. 46, 11. It is in the revived archaic script, always used for this purpose by the late Babylonian kings. Use of coloured glazed brick is characteristic of period; often relief figures of animals are made up of glazed bricks each specially moulded for its proper position and numbered (Ishtar Gate, Babylon). Royal palaces were often decorated with reliefs depicting conquests, &c., carved on slabs of alabastrine marble placed along the brick walls, with great statues of human-headed bulls (*Cherubim*), &c. (Nimrūd (CALAH), Kuyūnjik (NINEVEH), Khorsabad: *Brit. Mus.* and *Louvre*.) Burials usually in drab clay pot-coffins (larnakes) with covers; bodies still contracted; generally beneath houses; funerary furniture scanty, consisting chiefly of pins, beads, an occasional cylinder-seal, and a few pots (Fig. 45, 9 a b c d). No important burials known. Ribbed pots with blue (weathered green) glaze, often pitched both within and without, were also employed towards the end of the period, inverted over the bodies. Also anthropoid pottery sarcophagi, an idea imported from Egypt. Child burials in bowls. Iron objects sometimes buried with the dead; often found in palace-ruins (weapons, horse furniture, &c.). Bronze commonly used for gates, door, bolts, &c. (Gates of Shalmaneser's palace; *Brit. Mus.*).

2. *Persian (Achaemenian) period: c. 540-330 B. C.* This period is distinguished from the former by the less frequent use of bronze, the introduction of coinage, and the development of the simplified Persian cuneiform writing (never on tablets, only on stone monuments; see Fig. 46, 18). Bitumen ceased to be used as mortar in buildings. Persian walls (e.g. the Apadāna at Babylon) are easily distinguished by the use of clay mortar, and the unusual thickness of the mortar-courses between the bricks. Burial in shallow trough-like pottery coffins, with the bodies at full length, but with the knees slightly flexed (these continued during the next period).

VI. MIDDLE IRON AGE. 1. *Greek and Parthian periods; c. 330 B. C.-A. D. 220.*

Characteristics. Sudden degeneration and disappearance of

the ancient native civilization and art; imitation of Greek culture, Greek buildings (theatre at Babylon), and inscriptions; Greek legends on Parthian coins; Parthian kings call themselves 'Philhellenes'; Graeco-Roman architecture imitated (Hatra). Graeco-Roman terra-cottas, pottery lamps, pilgrim-flasks and bone-carvings; classical seal gems; Roman glass; fragments of imitation of classical sculpture in marble (the material being adopted as well as the style); bad classical figurines in bronze; and, of course, coins—these are characteristic remains found on mounds of this period. About 100 B.C. the use of cuneiform was given up; clay tablets were no longer used. Aramaic became the usual form of writing; ink used on sherds; wax tablets. Small bowls often found with ink-written incantations in Judaeo-Aramaic (see Fig. 46, 19). Mounds of this period are perhaps most easily recognized by the quantities of deep-blue glazed sherds found lying about on them. The glaze is rather thin, laid on a coarse drab ware, and is often cracked. The blue is very fine, rivalling the old Egyptian. Burials of this period are often found in (besides the shallow pottery coffins mentioned above) rectangular oblong boxes of thin coarse ware with light friable blue glaze (Babylon), or (later) in slipper-shaped coffins (possibly Sassanian) of the same ware, rudely decorated with human figures (warriors) in relief, on panels (Warka). The blue glaze has often changed to a dark green, especially in the case of the Warka slipper-coffins. The lids are cemented to the coffins. Interments are now full length, the old custom of contraction having been entirely abandoned.¹ Gold ornaments and pieces of gold leaf, gold fillets, &c., are not unfrequently found with the bodies, besides armlets, toe and finger-rings, &c., of silver and bronze, the finger-rings usually of ordinary Roman types; pottery, lamps, and glass vessels. These coffins are often in brick vaults, usually placed haphazard in the ground, as in earlier times. Bricks small, hard, and yellow.

2. Sassanian Period; c. 220-650 A. D.

Characteristics. Reaction towards Oriental motives in art: a typical *antika* of the period is the Sassanian seal of cornelian, chalcedony, or haematite, in shape sometimes a ring, more often a flat sphere with one-third cut off to form a seal-base, perforated for stringing (see Fig. 45, 8), and inscribed in Pehlevi (see Fig. 46, 20), a script that to the uninitiated looks very like Cufic Arabic: the language is Old-Persian, which was spoken by the court officials at Ctesiphon, the language of the people being

¹ The western custom of cremation was never adopted, in spite of the Hellenization of culture. It offended both Babylonian and Iranian sentiment, although the Parthians were never very orthodox followers of Ahuramazda, and venerated (at least platonically) the most popular deities of the Greek pantheon.

Aramaic. Sculpture barbarized, but with a picturesque character of its own (Nakhsh-i-Rustam, Tak-i-Bostān), sometimes reminiscent of Indian work. Architecture: Parthian-Roman traditions (Ctesiphon). Pottery usually glazed blue (thicker glaze); also unglazed with rude painted geometric patterns. Unglazed bowls with Hebrew and Mandaitic magical inscriptions. Bronze no longer used except for coins. Objects from mounds very like those of preceding age, but less of Roman origin. Not much known of burials; the Warka slipper-coffins usually regarded as Parthian may possibly be of early Sassanian age.

VII. LATER IRON AGE: *Muhammadian Period*; c. 650-1500 A.D.¹

Characteristics. Development of art under Persian influence till Tartar conquest in thirteenth century: the destruction and depopulation of the country at that time brought all real artistic development to an end. Flourishing period: the 'Abbāsīd Khalīfate: ninth century: Hārūn al-Rashīd. Ruins of the ancient city and palaces of Samārrā: halls with modelled and painted plaster-decorations, not only geometrical but also (Persian heterodox influence) representing trees, birds, &c. No more sculpture in round or relief of human figures or animals. The only survival of classical tradition would appear to be to some extent in architecture: Greek architects.

Coins: thin gold, and silver, with Cufic inscriptions only (see Fig. 46, 21). Mounds of this period may be known by fragments of marble-carving with Cufic inscriptions; plaster-work; Arab and Persian vase and tile fragments in unglazed ware with raised decoration or rough painted designs; thick blue, green, yellow, or brown glaze, metallic lustre-glaze, &c., variegated glass bangles, and rings; bits of cloudy white glass (from lamps); fragments of wood, carved and inlaid with bone, nacre, &c., in geometrical patterns; textile fragments (which are naturally not commonly found in older mounds), &c.

Nothing is said with regard to burials, as these may, naturally, not be touched, any more than those in an English churchyard.

¹ The limit of age which constitutes an 'antiquity' for legal purposes is fixed in most antiquity-laws at 1700 A.D.

APPENDIX

LAWS OF ANTIQUITIES

THE following brief notes on the Laws of Antiquities in force in the various territories with which this book is concerned must not be taken as absolving the traveller from the necessity of consulting the full text of the laws. In general it may be said that the governments in the various countries of archaeological importance reserve the right to claim any object found in excavation, but except in Greece and Turkey the right of the excavator to receive a liberal return for his labour and expenditure is explicitly recognized. The value of this recognition depends on administrative practice.

The Greek Law of Antiquities.

Ἑπουργεῖον Παιδείας. Τμήμα ἀρχαιολογικόν. Ἀρχαιολογικὴ Νομοθεσία. Athens, Ἑθν. Τυπογραφεῖον 1918.

All antiquities found are the property of the Government and are controlled by an Archaeological Commission, consisting of the Ephor General of Antiquities and the ephors of the archaeological collections in Athens. Fixed antiquities must be reported by the discoverer to the Ephor General or one of the ephors of antiquities or other official. Damaging of ruins or remains of monuments is forbidden. Owners of the land on which portable antiquities desirable for the National Museums are found are compensated to the extent of half their value. Any person who finds antiquities on his land must report them within five days, on pain of confiscation. The same applies to any one who finds antiquities on another person's land, or in any other way comes into possession of antiquities. Informers against breaches of the law are rewarded by the amount of the compensation due to those who keep the law. Objects not considered worth keeping by the Museums are returned to the owner of the land. Excavations, even on private property, must be authorized by the Ministry of Education. The Government has the right of expropriating land for purposes of excavation. In Government excavations, the owner of the land receives one-third of the value of the objects considered worth keeping by the Museums. Secret excavation is punished by confiscation of the finds, imprisonment, and temporary loss of civil rights. In authorized excavations by a landowner or his representative the excavator receives half the value of the finds taken by the Museums. Any one attempting to excavate

on another man's land is punished by imprisonment. Antiquities found in the country may not be exported (on pain of imprisonment or fine and temporary loss of civil rights) without permission, which is only granted for objects not considered by the Archaeological Commission to be of use to the Museums. Such objects on export are subject to a tax of 10 per cent. *ad valorem* unless declared entirely valueless by the Commission. Antiquities imported into the country must be declared in the Customs House and reported to the Ephor General of Antiquities, a descriptive catalogue in duplicate being sent, and cannot be re-exported without permission, which is obtained by producing the articles with the original catalogue to the Ephor General; if not reported they are regarded as having been found in the country.

The Turkish Law of Antiquities.

Loi sur les Antiquités promulguée le 29 Séfer 1324 (10 Avril 1322). Extrait du *Levant Herald* du 8, 9, 11 et 13 Juin 1906. Constantinople, Imprimerie du *Levant Herald*, Péra, 1906.

Antiquities are controlled by the Director-General of the Imperial Museums and a Commission, the Directors of Public Instruction in the provinces acting as agents. All ancient monuments and objects (including those of Islamic date) are the property of the Government. Any fixed antiquities discovered must be reported under pain of fine within 15 days to the official in charge of antiquities, or in his absence to the nearest civil or military official. Punishment by fine and imprisonment is inflicted for destroying or injuring monuments, measuring or making impressions without authorization.

Transportable antiquities found on a man's land must be reported by him within a week. The landowner receives half the value of objects thus reported and bought by the State; objects not reported are confiscated, and the landowner fined. This clause applies to those who find antiquities on land belonging to other private persons or to the State. Excavation is the exclusive privilege of the Museums, but firmans may be obtained by scientific societies and specialists. Unauthorized excavation is punished by imprisonment and confiscation. The State has the right of making preliminary soundings and of expropriation. Applications for leave to excavate must be made to the Minister of Public Instruction. All finds belong to the State. Unauthorized dealing in antiquities is punishable by fine, imprisonment, and confiscation. Exportation of antiquities found in the Empire is forbidden. Antiquities imported must be reported to the directorate of antiquities, and may not be sent from one part of the Empire to another, or re-exported, without permission from the Director-General.

The Cypriote Law of Antiquities.

To Consolidate and Amend the Law relating to Ancient Monuments and Antiquities, and to provide Museums. Law no. IV of 1905. See Sir J. T. Hutchinson and S. Fisher, *The Statute Laws of Cyprus, 1878-1905* (London, 1906), pp. 595-608. Amended by the Antiquities (Amendment) Law, 1927.

Objects later than the Turkish conquest, and coins of Byzantine or later times, are not deemed to be antiquities. All undiscovered antiquities of movable character are the property of the Government; all immovable antiquities are also the property of the Government, unless some person shall be the owner of them. All antiquities must be reported by the person in possession of them to the Museum Committee, on pain of confiscation; antiquities found except in the course of authorized excavations must be reported within five days to the District Commissioner. One-third of such movable antiquities is taken by the Government, one-third by the finder, and one-third by the owner of the land. Damage to ancient monuments is punished by fine or imprisonment or both. Unauthorized excavation, even on land belonging to the excavator, and the purchasing of objects illegally excavated, are punished by fine or imprisonment or both. Application for leave to excavate must be made to the Chief Secretary for Government. All antiquities found in excavation belong to the Government; the share of such objects allotted to the excavator is fixed by the Museum Committee with the approval of the Governor after the conclusion of the excavation, according to such stipulations as the High Commissioner thinks fit to make on granting the permit. The Government has the right to expropriate land for the purpose of excavations. The Museum Committee may acquire the interests of any private person in an antiquity on payment of compensation. If the sum agreed on is not paid within six months, the Museum Committee loses all right to its acquisition. Export of antiquities is forbidden except with the permission of the High Commissioner, which is granted only for objects not required by the Museum or for antiquities the interests in which the Museum Committee has failed to acquire in the manner described.

The Egyptian Law of Antiquities.

La Nouvelle Loi sur les Antiquités de l'Égypte et ses annexes. Service des Antiquités. Le Caire, Imprimerie de l'Institut français d'archéologie orientale. 1913.

All antiquities belong to the State. The State has the right of expropriating ground containing antiquities. Transportable

antiquities when found must be reported to nearest administrative authority or agents of the Service of Antiquities; the finder receives half the objects thus reported or their value. Excavation, dealing in antiquities, and exportation are forbidden unless under authorization. Destruction of and damage to antiquities is punishable by fine and imprisonment. Applications for leave to export or to excavate should be made to the Director-General of Service of Antiquities. A tax of 1½ per cent. is levied on the declared value of objects passed for export. Leave to excavate is granted only to savants recommended by Governments or learned societies, or to private persons presenting proper guarantees. The excavator pays the cost of guarding the site. The Government takes half the portable objects found.

[N.B. The Egyptian law, reserving the right of the Government to only half the antiquities found, remains unchanged, but in practice it is abrogated by the terms which all applicants for Excavation Permits are required to sign. These reserve all objects found at the free discretion of the Government, which may retain everything. The following declaration has, however, been made by the Egyptian Government by letter of May 26, 1926, and under the assurances thus given the principal societies concerned have continued their excavations:

'The Egyptian Government, desirous of giving assurances of liberal treatment which it intends to apply to excavators, has no objection to add to Article 10 of the Excavation Permit signed annually by excavators, the following note: "Scientific principles require that the Antiquities Service may be able to reserve freely all objects which it considers it needs for its collections. These same principles require also that it give largely objects even of first importance which it does not need for its collections. The Service, basing itself upon the said principles, does not wish either to sell objects found by the excavators or make reserves of them which could be given to other excavators. On the contrary, the Service is disposed to give to the beneficiary of the Permit all the objects of which it has no need for the State collections in Cairo, as well as in other towns, and no matter what the importance of the said objects. It is expressly understood, however, that the Service will form the said collections with entire freedom and that it will decide in its sovereign capacity what it will give as well as the choice of the objects which will be given to the holder of the Permit."']

Palestine Antiquities Ordinance.

An Antiquities Ordinance is, at the time of writing, under consideration. The following statement of provisions which it

will contain must therefore be taken with reserve, though it is unlikely that any essential point will be modified.

Objects later than 1700 are not deemed to be antiquities (which term includes historical monuments) unless declared to be so by the Director of the Department of Antiquities. The High Commissioner has the right to acquire any antiquity discovered after the promulgation of the Ordinance; until such right has been renounced, no person, whether owner of the land on which it is found, or actual finder, has any right to it, or is entitled to dispose of it. The High Commissioner's right to acquire is subject to the payment to the finder of the value of the antiquity; unless it is decided that the antiquity is to be preserved on the site where it is found and the area is declared to be an historical site, when the value is not payable to the finder. All discoveries of antiquities to be reported to the authorities; no digging or searching permitted without licence, which is only granted to persons of approved scientific competence. Antiquities found in licensed excavations to be divided; the excavator to have a representative share, but any object considered indispensable for illustration of the history or art of Palestine to be retained for the Palestine Museum; the excavator's share may be supplemented by objects which are the property of the Government, or by other compensation. Early publication of results required. No dealing permitted without licence. No export without licence; such licence to be granted without fee in the case of antiquities purchased from the Government, or renounced by the Government, or previously imported into Palestine and subjected to payment of Customs Import Duty, or loaned by the Director to learned societies or museums, or proved to be of religious use and the property of a religious or ecclesiastical body.

Excavation, building, irrigation in the immediate neighbourhood of an historical monument or other interference with it is forbidden without permission of the Director. Provision is made for the care of historical monuments and sites. Penalties by fine or imprisonment or both are provided for failure to report the finding of antiquities, dealing or exporting without licence, injury to antiquities, &c. The High Commissioner may authorize sales, exchanges, or loan of antiquities belonging to the Government.

Iraq Law of Antiquities.

Iraq Government Gazette, No. 19, Baghdad, 15 Sept. 1924, pp. 5-9.

Objects later than A.D. 1700 are not deemed to be antiquities. All antiquities, whether movable or immovable, now being or

afterwards found to be on or under the surface of the soil are the property of the State. No antiquity may be alienated by any private person without the consent of the Minister of Communications and Works; such consent to be given by general or special licence. All discoveries of antiquities to be reported within one month to the Administrative Authorities of the district. Injury or destruction of any immovable antiquity punished by fine or imprisonment or both. The Minister may acquire any movable antiquity reported to him, paying a reward at his discretion; whoever having discovered such an antiquity injures, destroys, or parts with it before he is officially informed that the Minister has decided not to take it, is punishable by fine or imprisonment or both. Traffic in antiquities is allowed only under licence; export of antiquities only under a permit issued by the Minister, and payment of a percentage of the value as declared; at which value the Minister may acquire any antiquity on behalf of the State. Unauthorized excavation or sounding is punishable by fine or imprisonment; if on an historical site, by both. Permits to excavate are granted only to learned societies or institutions or individuals of proved scientific competence. Of objects found in excavation, the Director of Antiquities chooses such as are needed for the scientific completeness of the 'Iraq Museum; of the remainder, he assigns to the excavator such as will reward him adequately, making the selection as far as possible representative; such objects the excavator may export free of charge.

Proposals for the Administration of Antiquities in Mandated and Similar Territories.

Approved Nov. 30, 1921, by the Archaeological Joint Committee.

1. It is desirable that in all countries of archaeological importance which are controlled or influenced by a European or American power, without being owned with sovereignty by that power, the same principles should be applied to the administration of antiquities.

2. The objects of an administration of antiquities should be (1) to conserve all antiquities from destruction, so far as this is not incompatible with the needs of modern life and progress; (2) to secure for the country of origin a full representation of the antiquities found in its soil; (3) to promote the advancement of knowledge.

3. The administration has to deal with (1) the natives of the country, (2) foreign excavators, explorers, and other travellers. Its duties include (1) the preservation of monuments *in situ*, (2) the maintenance of a museum or museums in which the

past history and civilization of the country is illustrated by a collection of portable antiquities.

4. The best method to secure the preservation and notification of antiquities by the natives is to proceed by encouragement rather than punishment; to reward the discoverer, and make it his interest to report them to the competent authority; to make him realize that his own advantage as well as the honour of his country is involved in their preservation.

5. While the administration may claim in principle the ownership of all antiquities, it should not exercise this right except to prevent the destruction of them or their unlicensed export from the country. The finder of an antiquity, on reporting it to the nearest convenient centre, should be allowed to retain possession of it so long as he takes proper care of it. If he wishes to alienate it, he may do so subject to the provisions of the Law of Antiquities on this head.

6. No antiquities should be sold except through a person holding a licence to trade in them or by a permit from the Department of Antiquities.

7. No antiquity should be exported from the country without a permit from the Department of Antiquities.

8. The Department of Antiquities should have right of pre-emption at a price to be fixed according to the procedure laid down in the Law of Antiquities of the country.

9. In determining what antiquities shall be allowed to leave the country, and what shall be retained, the administration, while making it its duty to secure a full representation of the country's antiquities for the local museum, should take into account the interests of the advancement of knowledge, and the general advantage of encouraging the study of these antiquities in other civilized countries. A policy of exclusiveness is bad both for the country of origin and for the general advance of knowledge.

10. In order to secure a scientific knowledge of past history, excavation by well-qualified persons should be encouraged.

11. Authorization to excavate should be granted only to persons whom the administration considers to possess sufficient archaeological experience, or to persons whose competence is guaranteed by a learned society or institution.

12. In order to encourage excavation, the excavator should be allowed to receive a fair share of the proceeds of his excavations. While no exact proportion can be prescribed, approximate equality between the country of origin and the excavator should be aimed at. The administration has the right to claim such objects as it considers essential for the proper representation of the country's antiquities in the local museum, but if this leaves an inadequate share for the excavator, he should be compensated in some other manner.

13. The individual, society, or institution responsible for the excavations should be required to publish within a reasonable period a scientific report of the results. It is also desirable that such publication should record the ultimate destination of the antiquities found.

14. Equal facilities for excavation should be granted to qualified explorers of all countries which themselves grant such facilities in territories under their control or influence.

General Principles.

The recommendations of the Committee were closely followed in the statement of Principles which should form the foundation of the Laws of Antiquities to be enacted for the various Provinces formerly under Turkish rule, drawn up by an International Committee in Paris, and recommended to the Commission for regulating the Mandates under the League of Nations :—

Principes du règlement devant être adopté par chacune des Puissances mandataires.

1. 'ANTIQUITÉ' signifie toute construction, tout produit de l'activité humaine, antérieur à l'année 1700.

2. Toute personne qui, ayant découvert une antiquité, la signalera à un employé du Département des Antiquités du pays, sera récompensée suivant la valeur de l'objet, le principe à adopter devant être d'agir par encouragement plutôt que par menace.

3. Aucun objet antique ne pourra être vendu sauf au Département des Antiquités du pays, mais si ce Département renonce à l'acquérir la vente en deviendra libre. Aucune antiquité ne pourra sortir du pays sans un permis d'exportation dudit Département.

4. Toute personne qui, exprès ou par négligence, détruira ou détériorera un objet ou une construction antique, devra être passible d'une peine à fixer par l'autorité du pays.

5. Aucun déblaiement ni aucune fouille ayant pour objet la recherche d'antiquités ne seront permis sous peine d'amende, sauf aux personnes autorisées par le Département des Antiquités du pays.

6. Des conditions équitables devront être fixées par chaque Puissance mandataire pour l'expropriation temporaire ou permanente des terrains qui pourraient offrir un intérêt historique ou archéologique.

7. Les autorisations pour les fouilles ne devront être accordées qu'aux personnes qui offrent des garanties suffisantes d'expérience archéologique. Aucune des Puissances mandataires

ne devra, en accordant ces autorisations, agir de façon à écarter, sans motif valable, les savants des autres nations.

8. Les produits des fouilles pourront être divisés entre le fouilleur et le Département des Antiquités de chaque pays dans une proportion fixée par ce Département. Si, pour des raisons scientifiques, la division ne semble pas possible, le fouilleur devra recevoir, au lieu d'une partie de la trouvaille, une juste indemnité.

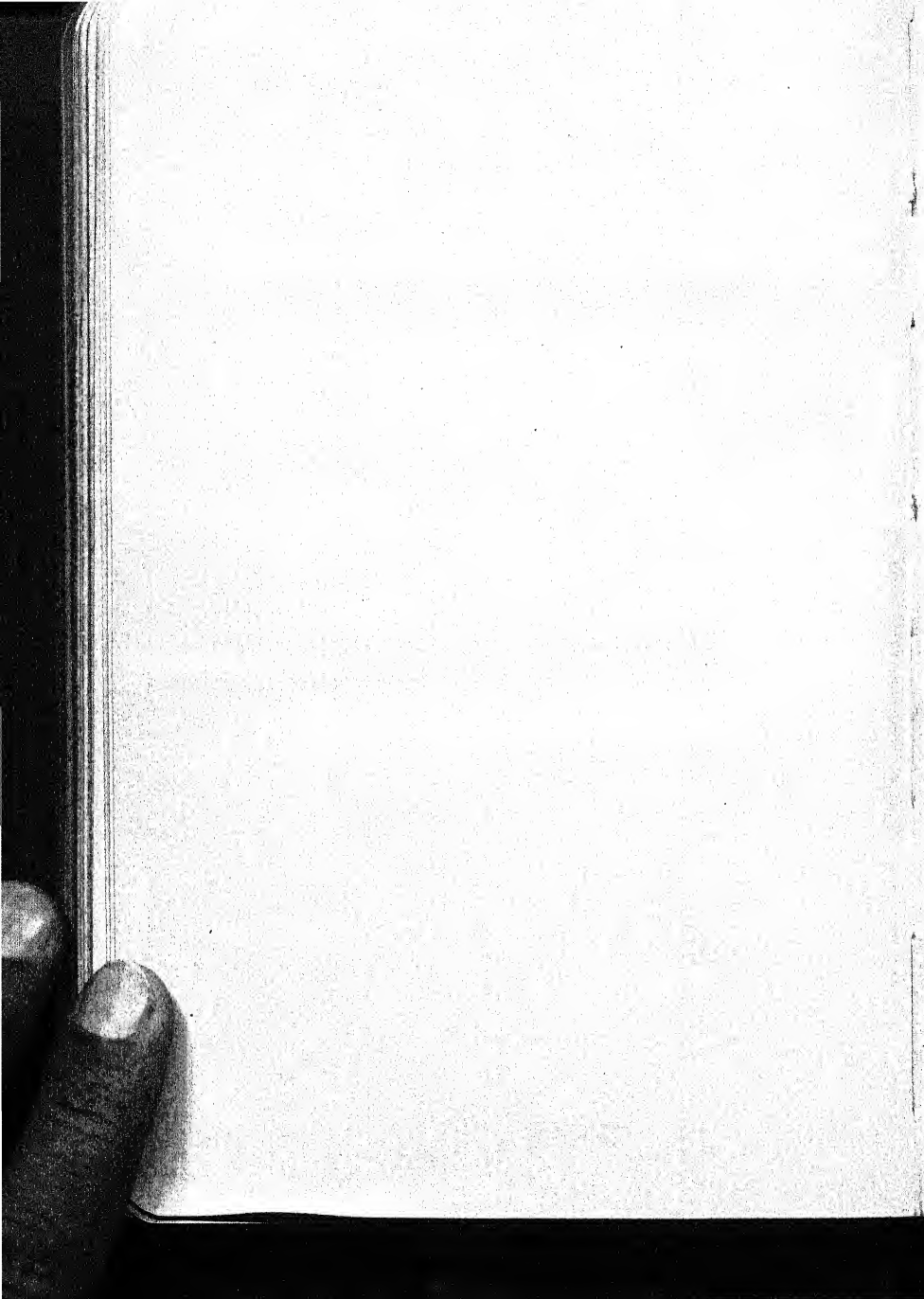
ADDENDUM TO THE APPENDIX ON LAWS OF ANTIQUITIES.

Syria.

The French authorities in Syria have recently modified in favour of the excavator the conditions on which excavations may be made in that territory; movable antiquities will in future be divided equally between the Government and the excavator, since this arrangement seems best calculated to further the development of research. 'Il a été décidé ... que les antiquités mobilières seront désormais partagées en parties égales entre l'État et le fouilleur; nulle mesure ne paraît plus propre à aider encore au développement des recherches.' [*Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres*, 16 Nov. 1928, p. 330: report by M. Charles Viroilleaud on archaeological work in Syria and the Lebanon.]

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